13 Current $\mathcal{AIPS}$ Software

The complete lists of software in $\mathcal{AIPS}$ are kept up-to-date in certain special files which may then be accessed with the AIPS verb ABOUT. Semi-automatic software makes these listing files using the primary and secondary keywords entered by $\mathcal{AIPS}$ programmers in the numerous help files. The explanations given for each symbol are also those entered by the programmers as the "one-liner" descriptions of the symbol for which the help file is written. The lists of primary and secondary keywords may be viewed directly by typing:

> HELP CATEGORY C_R	to view primary keywords
> HELP SECONDARY C_R	to view secondary keywords

The help file for ABOUT is more explanatory, however. The general help file (for HELP itself) lists a number of general help files which will be of interest. These are also mentioned in the section called INFORMATION below.

The following sections are verbatim reproductions of the various listing files used by ABOUT and are roughly current to the current release of $\mathcal{AIPS}$. Each section title is the name of the keyword which is used as the ABOUT topic. Each line within a section lists a task, verb, pseudoverb, procedure, adverb, or RUN file with a very brief description of its function. Pseudoverbs come in two flavors: those that act roughly like verbs and those that must be treated specially, *i.e.*, that must appear alone on a line or only in certain contexts. The help file for each pseudoverb should clarify the its grammatical limits. Typing

> HELP *name* C_R

where *name* is one of the entries in the left-hand column, will give more useful information about that $\mathcal{AIPS}$ symbol.

13.1 ADVERB

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ADVERB
Type:  General type of POPS symbol
Use:   Adverbs are the symbols used to address values.  They
       may be REAL (single-precision floating point), ARRAY
       (multiply-dimensioned REALs), or STRING (character
       strings with or without subscripts).  The user may
       create new adverbs by defining them while typing or
       editing procedures.
Grammar:   Adverb names may be used either in compile mode
       or in regular execute mode.  In the former, their
       pointers are compiled with the procedure and their
       values, at the time the procedure is invoked, are
       used during the execution of the procedure.
Usage examples:
       ARRAY2 = ARRAY1
       ARRAY3(I,J) = 23.6
       CHAN = 4
       STRARRY = 'STR1','STR2','STR3',STRAR2
       DUM3 (24, I, STRARRY)
    =====>  Character string data must be enclosed in quotes!
    =====>  This allows the compiler to tell data from adverb
            names and allows embedded special characters.
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List of ADVERBs
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ALIAS	adverb to alias antenna numbers to one another
ALLOKAY	specifies that initial conditions have been met.
ANTENNAS	Antennas to include/exclude from the task or verb
ANTNAME	A list of antenna (station) names
ANTUSE	Antennas to include/exclude from the task or verb
ANTWT	Antenna Weights for UV data correction in Calibration
APARM	General numeric array adverb used many places
ARRAY1	General scratch array adverb
ARRAY2	General scratch array adverb
ARRAY3	General scratch array adverb
ASDMFILE	Full path to EVLA ASDM/BDF directory
ASPMM	Plot scaling parameter - arc seconds per millimeter on plot
AVERSION	Specify a version of the ALBUS container
AVGCHAN	Controls averaging of spectral channels
AVGIF	Controls averaging of IF channels
AVOPTION	Controls type or range of averaging done by a task
AX2REF	Second reference pixel number
AXINC	Axis increment - change in coordinate between pixels
AXREF	Reference pixel number
AXTYPE	Type of coordinate axis
AXVAL	Value of axis coordinate at reference pixel
BADDISK	specifies which disks are to be avoided for scratch files
BAND	specifies the approximate frequency of UV data to be selected
BANDPOL	specifies polarizations of individual IFs
BASELINE	specifies which antenna pairs are to be selected/deselected
BATFLINE	specifies starting line in a batch work file
BATNLINE	specifies the number of lines to process in a batch work file
BATQUE	specifies the desired batch queue
BB	spare adverb for use in procedures
BCHAN	sets the beginning channel number
BCOMP	gives beginning component number for multiple fields
BCOUNT	gives beginning location for start of a process
BDROP	gives number of pooints dropped at the beginning
BIF	gives first IF (spectral window) to be included
BITER	gives beginning point for some iterative process
BLC	gives lower-left-corner of selected subimage
BLOCKING	specifies blocking factor to use on e.g. tape records
BLVER	specifies the version of the baseline-calibration table used
BMAJ	gives major axis size of beam or component
BMIN	gives minor axis size of beam or component
BOX	specifies pixel coordinates of subarrays of an image
BOXFILE	specifies name of Clean box text file
BPA	gives position angle of major axis of beam or component
BPARM	general numeric array adverb used too many places
BPASS5	Normalization control in BPASS for VLBARUN
BPASSPRM	Control adverb array for bandpass calibration
BPRINT	gives beginning location for start of a printing process
BPSOLINT	Sets SOLINT in BPASS for VLBARUN
BPVER	specifies the version of the bandpass table to be applied
BWSMEAR	amount of bandwidth smearing correction to use
CALCODE	specifies the type of calibrator to be selected
CALIN	specifies name of input disk file usually with calibration data
CALSOUR	specifies source names to be included in calibration
CALTASK	Controls which calibration task is used when by VLBARUN
CATNO	Specifies AIPS catalog slot number range
CBPLOT	selects a display of a Clean beam full width at half maximum
CCBOX	specifies pixel coordinates of subarrays of an image
CELLSIZE	gives the pixel size in physical coordinates
CHANNEL	sets the spectral channel number
CHANSEL	Array of start, stop, increment channel numbers to average
CHINC	the increment between selected channels
CLBOX	specifies subarrays of an image for Clean to search
CLCORPRM	Parameter adverb array for task CLCOR

CLEV	Contour level multiplier in physical units
CLINT	CL table entry interval
CMETHOD	specifies the method by which the uv model is computed
CMODEL	specifies the method by which the uv model is computed
CODETYPE	specifies the desired operation or data type
COLORS	specifies the desired TV colors
COMMENT	64-character comment string
CON3COL	Controls use of full 3-color graphics for contouring
CONFIG	Configuration ID number within an EVLA ASDM/BDF data set
COOINC	Celestial axes increment: change in coordinate between pixels
COORDINA	Array to hold coordinate values
COOREF	Reference pixel number for two coordinate axes
COOTYPE	Celestial axes projection type
COPIES	sets the number of copies to be made
CPARM	general numeric array adverb used many places
CROWDED	allows a task to perform its function in a crowded fashion
CTYPE	specifies type of component
CUTOFF	specifies a limit below or above which the operation ends
DARKLINE	The level at which vectors are switched from light to dark
DATA2IN	specifies name of input FITS disk file
DATAIN	specifies name of input FITS disk file
DATAOUT	specifies name of output FITS disk file
DCHANSEL	Array of start, stop, increment channel #S + IF to avoid
DCODE	General string adverb
DDISK	Deterimins where input Y2K data are found
DECIMAL	specifies if something is in decimal format
DECSHIFT	gives Y-coordinate shift of an image center from reference
DEFER	Controls when file creation takes place
DELCORR	Controls task actions on calibration tables.
DELTAX	Increment or size in X direction
DELTAY	Increment or size in Y direction
DENSITY	gives the desired tape density
DENUMB	a scalar decimal number
DETIME	specifies a time interval for an operation (destroy, batch)
DIGICOR	specifies whether VLBA digital corrections are to be applied
DIST	gives a distance
DO3COLOR	Controls whether full 3-color graphics are used in a plot
DO3DIMAG	specifies whether uvw's are reprojected to each field center
DOACOR	specifies whether autocorrelation data are included
DOALIGN	specifies how two or more images are aligned in computations
DOALL	specifies if an operation is done once or for all matching
DOALPHA	specifies whether some list is alphabetized
DOAPPLY	Flag to indicate whether an operation is applied to the data
DOARRAY	spcifies if subarrays are ignored or the information used
DOBAND	specifies if/how bandpass calibration is applied
DOBLANK	controls handling of blanking
DOBTWEEN	Controls smoothing between sources in calibration tables
DOCALIB	specifies whether a gain table is to be applied or not
DOCAT	specifies whether the output is saved (cataloged) or not
DOCELL	selects units of cells over angular unit
DOCENTER	selects something related to centering
DOCIRCLE	select a "circular" display (i.e. trace coordinates, ...)
DOCLIP	Controls whether and how a CLIP operation is performed
DOCOLOR	specifies whether coloring is done
DOCONCAT	selects concatenated or indivudual output files
DOCONFRM	selects user confirmation modes of repetitive operation
DOCONT	selects a display of contour lines
DOCRT	selects printer display or CRT display (giving width)
DODARK	specifies whether "dark" vectors are plotted dark or light
DODATE	specifies if the dat and time are to be used in some way

DODELAY	selects solution for phase/amplitude or delay rate/phase
DOEBAR	Controls display of estimates of the uncertainty in the data
DOEOF	selects end-of-file writing or reading until
DOEOT	selects tape positioning before operation: present or EOI
DOFIT	Controls which antennas are fit by what methods
DOFLAG	Controls closure cutoff in gain solutions and flagging
DOFRACT	Tells whether to compute a fraction or ratio
DOGREY	selects a display of a grey-scale image
DOGRIDCR	selects correction for gridding convolution function
DOHIST	selects a histogram display or controls writing of history file
DOHMS	selects sexagesimal (hours-mins-secs) display format
DOIFS	controls functions done across IFs
DOINVERS	selects opposite of normal function
DOKEEP	specifies if something is kept or deleted
DOMAX	selects solutions for maxima of models
DOMODEL	selects display of model function
DONEWTAB	do we make new tables, use a new table format, etc.
DOOUTPUT	selects whether output image or whatever is saved / discarded
DOPLOT	Controls plotting of something
DOPOL	selects application of any polarization calibration
DOPOS	selects solutions for positions of model components
DOPRINT	selects printer display or CRT display (giving width)
DOREAL	Say to do operation with real/imaginary rather than amplitude/phase
DORESID	selects display of differences between model and data
DOROBUST	Controls method of averaging - simple mean/rms or robust
DOSCALE	specifies if a scaling operation of some sort is to be performed
DOSCAN	specifies if a scan-related operation is to be done
DOSLICE	selects display of slice data
DOSPIX	selects solutions for spectral index of model components
DOSTOKES	selects options related to polarizations
DOTABLE	selects use of table-format for data
DOTV	selects use of TV display option in operation
DOTWO	do we make two of something
DOUVCOMP	selects use of compression in writing UV data to disk
DOVECT	selects display of polarization vectors
DOWAIT	selects wait-for-completion mode for running tasks
DOWEDGE	selects display of intensity step wedge
DOWEIGHT	selects operations with data weights
DOWIDTH	selects solution for widths of model components
DPARM	General numeric array adverb used many places
ECHAN	define an end for a range of channel numbers
ECOUNT	give the highest count or iteration for some process
EDGSKP	Deterimins border excluded from comparision or use
EDROP	number of points/iterations to be omitted from end of process
EFACTOR	scales some error analysis process
EHNUMB	an extended hexadecimal "number"
EIF	last IF (spectral window) number to be included in operation
EPRINT	gives location for end of a printing process
ERROR	was there an error
EXPERT	specifies an user experience level or mode
FACTOR	scales some display or CLEANing process
FGAUSS	Minimum flux to Clean to by widths of Gaussian models
FITOUT	specifies name of output text file for results of fitting
FLAGVER	selects version of the flagging table to be applied
FLDSIZE	specifies size(s) of images to be processed
FLMCOMM	Comment for film recorder image.
FLUX	gives a total intensity value for image/component or to limit
FMAX	specifies peak values of model components - results of fits
FORMAT	gives a format code number: e.g. FITS accuracy required
FOV	Specifies the field of view
FPARM	General numeric array adverb used in modeling
FPOS	specifies pixel positions of fit model components

FQCENTER	specifies that the frequency axis should be centered
FQTOL	Frequency tolerance with which FQ or frequency entries are accepted.
FREQID	Frequency Identifier for frequency, bandwidth combination
FREQSEL	List of frequencies desired
FSHIFT	specifies a position shift - output from fitting routines
FSIZE	file size in Megabytes
FUNCTYPE	specifies type of intensity transfer function
FWIDTH	gives widths of model components - results of fitting
GAIN	specifies loop gain for deconvolutions
GAINERR	gives estimate of gain uncertainty for each antenna
GAINUSE	specifies output gain table or gain table applied to data
GAINVER	specifies the input gain table
GCVER	specifies the version of the gain curve table used
GG	spare scalar adverb for use in procedures
GMAX	specifies peak values of model components
GPOS	specifies pixel positions of model components
GR2CHAN	specifies a second TV graphics channel to be used
GRADDRES	specifies user's home address for replies to gripes
GRCHAN	specifies the TV graphics channel to be used
GREMAIL	gives user's e-mail address name for reply to gripe entry
GRNAME	gives user's name for reply to gripe entry
GRPHONE	specifies phone number to call for questions about a gripe
GUARD	portion of UV plane to receive no data in gridding
GWIDTH	gives widths of model components
HIEND	End record number in a history-file operation
HISTART	Start record number in a history-file operation
I	spare scalar adverb for use in procedures
ICHANSEL	Array of start, stop, increment channel #S + IF to average
ICUT	specifies a cutoff level in units of the image
IM2PARM	Specifes enhancement parameters for OOP-based imaging: 2nd set
IMAGRPRM	Specifes enhancement parameters for OOP-based imaging
IMSIZE	specifies number of pixels on X and Y axis of an image
IN2CLASS	specifies the "class" of the 2nd input image or data base
IN2DISK	specifies the disk drive of the 2nd input image or data base
IN2EXT	specifies the type of the 2nd input extension file
IN2FILE	specifies name of a disk file, outside the regular catalog
IN2NAME	specifies the "name" of the 2nd input image or data base
IN2SEQ	specifies the sequence # of the 2nd input image or data base
IN2TYPE	specifies the type of the 2nd input image or data base
IN2VERS	specifies the version number of the 2nd input extension file
IN3CLASS	specifies the "class" of the 3rd input image or data base
IN3DISK	specifies the disk drive of the 3rd input image or data base
IN3EXT	specifies the type of the 3rd input extension file
IN3NAME	specifies the "name" of the 3rd input image or data base
IN3SEQ	specifies the sequence # of the 3rd input image or data base
IN3TYPE	specifies the type of the 3rd input image or data base
IN3VERS	specifies the version number of the 3rd input extension file
IN4CLASS	specifies the "class" of the 4th input image or data base
IN4DISK	specifies the disk drive of the 4th input image or data base
IN4NAME	specifies the "name" of the 4th input image or data base
IN4SEQ	specifies the sequence # of the 4th input image or data base
IN4TYPE	specifies the type of the 4th input image or data base
IN4VERS	specifies the version number of the 4th input extension file
IN5CLASS	specifies the "class" of the 5th input image or data base
IN5DISK	specifies the disk drive of the 5th input image or data base
IN5NAME	specifies the "name" of the 5th input image or data base
IN5SEQ	specifies the sequence # of the 5th input image or data base
IN5TYPE	specifies the type of the 5th input image or data base
IN5VERS	specifies the version number of the 5th input extension file
INCLASS	specifies the "class" of the 1st input image or data base
INDISK	specifies the disk drive of the 1st input image or data base
INEXT	specifies the type of the 1st input extension file

INFILE	specifies name of a disk file, outside the regular catalog
INLIST	specifies name of input disk file, usually a source list
INNAME	specifies the ”name” of the 1st input image or data base
INSEQ	specifies the sequence # of the 1st input image or data base
INTAPE	specifies the input tape drive number
INTERPOL	specifies the type of averaging done on the complex gains
INTEXT	specifies name of input text file, not in regular catalog
INTPARM	specifies the parameters of the frequency interpolation function
INTTIME	adds user-generated lines to the history extension file
INTYPE	specifies the type of the 1st input image or data base
INVERS	specifies the version number of the 1st input extension file
IOTAPE	Deterimins which tape drive is used during a Y2K RUN
ISCALIB	states that the current source is a point-source calibrator
J	spare scalar adverb for use in procedures
JOBNUM	specifies the batch job number
KEYSTRNG	gives contents of character-valued keyword parameter
KEYTYPE	Adverb giving the keyword data type code
KEYVALUE	gives contents of numeric-valued keyword parameter
KEYWORD	gives name of keyword parameter - i.e. name of header field
KK	Spare adverb for use in procedures
LABEL	selects a type of extra labeling for a plot
LEVS	list of multiples of the basic level to be contoured
LPEN	specifies the ”pen width” code # =¿ width of plotted lines
LTYPE	specifies the type and degree of axis labels on plots
MAPSHIFT	used by MAPPR to specify the shift of the image from the phase center
MAXPIXEL	maximum pixels searched for components in Clark CLEAN
MAXVERS	The maximum version number of a specified extension file type
MDISK	Determins where input Y2K data are found
MINAMPER	specifies the minimum amplitude error prior to some action
MINANTEN	states minimum number of antennas for a solution
MINPATCH	specifies the minimum size allowed for the center of the beam
MINPHSER	specifies the minimum phase error prior to some action
MPDIFS	Retains comparison differences between current images and master ones
NAXIS	Axis number
NBOXES	Number of boxes
NCCBOX	Number of clean component boxes
NCHAN	Number of spectral channels in each spectral window
NCHAV	Number of channels averaged in an operation
NCOMP	Number of CLEAN components
NCOUNT	General adverb, usually a count of something
NDIG	Number of digits to display
NFIELD	The number of fields imaged
NFILES	The number of files to skip, usually on a tape.
NGAUSS	Number of Gaussians to fit
NIF	Number of IFs (spectral windows) in a data set
NITER	The number of iterations of a process.
NMAPS	Number of maps (images) in an operation
NOISE	estimates the noise in images, noise level cutoff
NORMALIZ	specifies the type of gain normaliztion if any
NPIECE	The number of pieces to make
NPLOTS	gives number of plots per page or per job
NPOINTS	General adverb giving the number of something
NPRINT	gives number of items to be printed
NSKIP	Number of objects to skip
NTHREAD	Controls number of threads used by multi-threaded processes in OBIT
NUMTELL	selects POPS number of task which is the target of a TELL or ABORT
NX	General adverb referring to a number of things in the X direction
NY	General adverb referring to a number of things in the Y direction
OBJECT	The name of an object
OBOXFILE	specifies name of output Clean box text file
OFFSET	General adverb, the offset of something.
OFMFILE	specifies the name of a text file containing OFM values

OLDVOL	used by READISK to specify the disk number when WRITDISK was run
ONEBEAM	specifies whether one beam is made for all facets or one for each
ONEFREQ	states that the current CC model was made with one frequency
OPCODE	General adverb, defines an operation
OPTELL	The operation to be passed to a task by TELL
OPTYPE	General adverb, defines a type of operation.
ORDER	Adverb used usually to specify the order of polynomial fit
OTFMODE	Specifies whether the data are in on-the-fly mode or not
OUT2CLAS	The class of a secondary output file
OUT2DISK	The disk number of a secondary output file.
OUT2NAME	The name of a secondary output file.
OUT2SEQ	The sequence of a secondary output file.
OUTCLASS	The class of an output file
OUTDISK	The disk number of an output file.
OUTFGVER	selects version of the flagging table to be written
OUTFILE	specifies name of output disk file, not in regular catalog
OUTNAME	The name of an output file.
OUTPRINT	Specifies name of disk file to keep the printer output
OUTSEQ	The sequence of an output file.
OUTTAPE	The output tape drive number.
OUTTEXT	specifies name of output text file, not in regular catalog
OUTVERS	The output version number of an extension file (table).
OVERLAP	specifies how overlaps are to be handled
OVRSWTCH	specifies when IMAGR switches from OVERLAP ¿= 2 to OVERLAP = 1 mode
PBPARM	Primary beam parameters
PBSIZE	estimates the primary beam size in interferometer images
PCUT	Cutoff in polarized intensity
PDVER	specifies the version of the spetral polarization table to use
PHASPRM	Phase data array, by antenna number.
PHAT	Prussian hat size
PHSLIMIT	gives a phase value in degrees
PIX2VAL	An image value in the units specified in the header.
PIX2XY	Specifies a pixel in an image
PIXAVG	Average image value
PIXRANGE	Range of pixel values to display
PIXSTD	RMS pixel deviation
PIXVAL	Value of a pixel
PIXXY	Specifies a pixel location.
PLCOLORS	specifies the colors to be used
PLEV	Percentage of peak to use for contour levels
PLVER	specifies the version number of a PL extension file
PMODEL	Polarization model parameters
POL3COL	Controls use of full 3-color graphics for polarization lines
POLANGLE	Intrinsic polarization angles for up to 30 sources
POLPLOT	specifies the desired polarization ratio before plotting.
PPARM	used by PEELR to list the facets to be ”peeled”
PRIORITY	Limits prioroty of messages printed
PRNUMBER	POPS number of messages
PROGRAM	Specify a program to be used
PRSTART	First record number in a print operation
PRTASK	Task name selected for printed information
PRTIME	Time limit
PRTLEV	Specifies a code for the amount of information requested.
PRTLIMIT	specifies limits to printing functions
PVPLOT	selects a display of a polarization vector in a box in a corner
QCREATE	adverb controlling the way large files are created
QUAL	Source qualifier
QUANTIZE	Quantization level to use
RADIUS	Specify a radius in an image
RASHIFT	Shift in RA
REASON	The reason for an operation
REFANT	Reference antenna number

REFDATE	To specify the initial or reference date of a data set
REFREQ	Specifies the frequency to be uased as the reference
REMHOST	gives the name of another computer which will provide service
REMQUE	specifies the desired batch queue on a remote computer
REMTAPE	gives the number of another computer's tape device
RESTFREQ	Rest frequency of a transition
REWEIGHT	Reweighting factors for UV data weights.
RGBCOLOR	specifies the desired TV graphics color
RGBGAMMA	specifies the desired color gamma corrections
RGBLEVS	colors to be applied to the contour levels
RMSLIMIT	selects things with RMS above this limit
ROBUST	Uniform weighting "robustness" parameter
ROMODE	Specified roam mode
ROTATE	Specifies a rotation
ROTMEAS	Tells the rotation measure of a source
RPARM	General numeric array adverb used in modeling
SAMPTYPE	Specifies sampling type
SCALR1	General adverb
SCALR2	General adverb
SCALR3	General adverb
SCANLENG	specify length of "scan"
SCUTOFF	noise level cutoff
SEARCH	Ordered list of antennas for fring searches
SELBAND	SpecifieS bandwidth of the desired frequency ID
SELFREQ	Specifies frequency of desired frequency ID
SHIFT	specifies a position shift
SKEW	Specifies a skew angle
SLOT	Specifies AIPS catalog slot number
SMODEL	Source model
SMOOTH	Specifies spectral smoothing
SMOTYPE	Specifies smoothing
SNCORPRM	Task-specific parameters for SNCOR.
SNVER	specifies the output solution table
SOLCON	Gain solution constraint factor
SOLINT	Solution interval
SOLMIN	Minimum number of solution sub-intervals in a solution
SOLMODE	Solution mode
SOLSUB	Solution sub-interval
SOLTYPE	Solution type
SORT	Specified desired sort order
SOUCODE	Calibrator code for source, not calibrator, selection
SOURCES	A list of source names
SPARM	General string array adverb
SPECFLUX	Specifies the flux at the reference frequency
SPECINDX	Spectral index used to correct calibrations
SPECPARM	Spectral index per polarization per source
SPECTRAL	Flag to indicate whether an operation is spectral or continuum
SPECURVE	Spectral index survature used to correct calibrations
SRCALIAS	A list of source names, used as an alias
SRCNAME	A single source name
STFACTOR	scales star display or SDI CLEANing process
STOKES	Stokes parameter
STORE	Store current POPS environment
STRA1	General string adverb
STRA2	General string adverb
STRA3	General string adverb
STRB1	General string adverb
STRB2	General string adverb
STRB3	General string adverb
STRC1	General string adverb
STRC2	General string adverb
STRC3	General string adverb

STVERS	star display table version number
SUBARRAY	Subarray number
SYMBOL	General adverb, probably defines a plotting symbol type
SYS2COM	specifies a command to be sent to the operating system
SYSCOM	specifies a command to be sent to the operating system
SYSOUT	specifies the output device or file used by the system
SYSVEL	Systemic velocity
TASK	Name of a task
TAU0	Opacities by antenna number
TBLC	Gives the bottom left corner of an image to be displayed
TCODE	Deterimins which type of Y2K is RUN.
TDISK	Deterimins where output Y2K data is placed
TERSE	Controls the amount of information printed by the Y2K tests
THEDATE	contains the date and time in a string form
TIME2	used by VLBAMPCL as the time range for a second calibrator scan
TIMERANG	Specifies a time range
TIMETOL	used by MERGECAL to control accuracy when comparing times
TIMSMO	Specifiessmoothing times
TMASK	Deterimins which tasks are executed when a Y2K is RUN.
TMODE	Deterimins which input is used when a Y2K is RUN.
TNAMF	Internal variable for Y2K test suite
TRANSCOD	Specified desired transposition of an image
TRC	Specified the top right corner of a subimage
TRECVR	Receiver temperatures by polarization and antenna
TRIANGLE	specifies closure triangles to be selected/deselected
TT	spare scalar adverb for use in procedures
TTRC	Specifies the top right corner of a subimage to be displayed
TV2CHAN	Specified a second TV channel (plane) used in some operations
TVBUT	Tells which AIPS TV button was pushed
TVCHAN	Specified a TV channel (plane)
TVCORN	Specified the TV pixel for the bottom left corner of an image
TVLEVS	Gives the peak intensity to be displayed in levels
TVXY	Pixel position on the TV screen
TXINC	TV X coordinate increment
TYINC	TV Y coordinate increment
TYVER	specifies the version of the system temperature table used
TZINC	TV Z coordinate increment
USERID	User number
UVBOX	radius of the smoothing box used for uniform weighting
UVBXFN	type of function used when counting for uniform weighting
UVCOPPRM	Parameter adverb array for task UVCOP
UVFIXPRM	Parameter adverb array for task UVFIX
UVRANGE	Specify range of projected baselines
UVSIZE	specifies number of pixels on X and Y axes of a UV image
UVTAPER	Widths in U and V of gaussian weighting taper function
UVWTFN	Specify weighting function, Uniform or Natural
VCODE	General string adverb
VECTOR	selects method of averaging UV data
VELDEF	Specifies velocity definition
VELTYP	Velocity frame of reference
VERSION	Specify AIPS version or local task area
VLAMODE	VLA observing mode
VLAOBS	Observing program or part of observer's name
VLBINPRM	Control parameters to read data from NRAO/MPI MkII correlators
VNUMBER	Specifies the task parameter (VGET/VPUT) save area
VPARM	General numeric array adverb used in modeling
WEIGHTIT	Controls modification of weights before gain/fringe solutions
WGAUSS	Widths of Gaussian models (FWHM)
WTTHRESH	defines the weight threshold for data acceptance
WTUV	Specifies the weight to use for UV data outside UVRANGE
X	spare scalar adverb for use in procedures
XAXIS	Which parameter is plotted on the horizontal axis.
XINC	increment associated with an array of numbers
XPARM	General adverb for up to 10 parameters, may refer to X coord
XTYPE	X axis (U) convolving function type
XYPHASE	X-Y phase differences

XYRATIO	Ratio of X to Y units per pixel
Y	spare scalar adverb for use in procedures
Y2KDISK	Specifies logical name of disk area for Y2K to read or write
Y2KFILE	File name of the current Y2K disk file
Y2KSIZE	Specifies the size of the Y2K test to be run
YINC	Y axis increment
YPARM	Specifies Y axis convolving function
YTYPE	Y axis (V) convolving function type
ZEROSP	Specify how to include zero spacing fluxes in FT of UV data
ZINC	Set the increment of the third axis
ZXRATIO	Ratio between Z axis (pixel value) and X axis

13.2 ANALYSIS

ACIMG	Makes image of autocorrelation data showing time vs frequency
ACTNOISE	puts estimate of actual image uncertainty and zero in header
AFARS	Is used after FARS to determine Position and Value of the maximum
AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
AHIST	Task to convert image intensities by adaptive histogram
AVOPTION	Controls type or range of averaging done by a task
BDEPO	computes depolarization due to rotation measure gradients
BLANK	blanks out selected, e.g. non-signal, portions of an image
BLSUM	sums images over irregular sub-images, displays spectra
BSCOR	Combines two beam-switched images
BSTST	Graphical display of solutions to frequency-switched data
BWSMEAR	amount of bandwidth smearing correction to use
CC2IM	Make model image from a CC file
CMPLX	Combines complex images by a variety of mathematical methods.
COMB	combines two images by a variety of mathematical methods
CTYPE	specifies type of component
CUBIT	Model a galaxy's density and velocity distribution from full cube
DFTIM	Makes image of DFT at arbitrary point showing time vs frequency
DOALIGN	specifies how two or more images are aligned in computations
DOFARS	Procedure to aid in Faraday rotation synthesis using the FARS task
DOINVERS	selects opposite of normal function
DOMAX	selects solutions for maxima of models
DOOUTPUT	selects whether output image or whatever is saved / discarded
DOPOS	selects solutions for positions of model components
DOSPIX	selects solutions for spectral index of model components
DOWIDTH	selects solution for widths of model components
ECOUNT	give the highest count or iteration for some process
FARS	Faraday rotation synthesis based on the brightness vs wavelength
FLUX	gives a total intensity value for image/component or to limit
FMAX	specifies peak values of model components - results of fits
FPOS	specifies pixel positions of fit model components
FQUBE	collects n-dimensional images into n+1-dimensional FREQID image
FSHIFT	specifies a position shift - output from fitting routines
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
FWIDTH	gives widths of model components - results of fitting
GAL	Determine parameters from a velocity field
GMAX	specifies peak values of model components
GPOS	specifies pixel positions of model components
GRBLINK	Verb which blinks 2 TV graphics planes
GWIDTH	gives widths of model components
HGEOM	interpolates image to different gridding and/or geometry
HLPTVHLD	Interactive image display with histogram equalization - run-time help

HLPTVIEW	Interactive display of cube in 3 transpositions - run-time help
HLPTVSAD	Find & fit Gaussians to an image with interaction - run-time help
HLPTVSPC	Interactive display of spectra from a cube - run-time help
HOCLN	Task to do a clean of holography images
HOLGR	Read & process holography visibility data to telescope images
HOLOG	Read & process holography visibility data to telescope images
IMCENTER	returns pixel position of sub-image centroid
IMDIST	determines spherical distance between two pixels
IMEAN	displays the mean & extrema and plots histogram of an image
IMERG	merges images of different spatial resolutions
IMFIT	Fits Gaussians to portions of an image
IMLIN	Fits and removes continuum emission from cube
IMMOD	adds images of model objects to an image
IMSTAT	Returns statistics of a sub-image
IMVAL	returns image intensity and coordinate at specified pixel
IMVIM	plots one image's values against another's
IRING	integrates intensity / flux in rings / ellipses
JMFIT	Fits Gaussians to portions of an image
LAYER	Task to create an RGB image from multiple images
LGEOM	regrids images with rotation, shift using interpolation
LISPX	Fits spectral indexes to a list of spectra, allows interactive edit
MATHS	operates on an image with a choice of mathematical functions
MAXFIT	returns pixel position and image intensity at a maximum
MCUBE	collects n-dimensional images into n+1-dimensional image
MEDI	combines four images by a variety of mathematical methods
MFITSET	gets adverbs for running IMFIT and JMFIT
MFPRT	prints MF tables in a format needed by modelling software
MINPATCH	specifies the minimum size allowed for the center of the beam
MODAB	Makes simple absorption/emission spectral-line image in I/V
MODIM	adds images of model objects to image cubes in IQU polarization
MODSP	adds images of model objects to image cubes in I/V polarization
MOMFT	calculates images of moments of a sub-image
MOMNT	calculates images of moments along x-axis (vel, freq, ch)
MTARS	Compute model inputs to TARS
MWFLT	applies linear & non-linear filters to images
NGAUSS	Number of Gaussians to fit
NINER	Applies various 3x3 area operaters to an image.
NNLSQ	Non-Negative-Least-Squares decomposition of spectrum
OMFIT	Fits sources and, optionally, a self-cal model to uv data
OUTTEXT	specifies name of output text file, not in regular catalog
PANEL	Convert HOLOG output to panel adjustment table
PBCOR	Task to apply or correct an image for a primary beam
PRTIM	prints image intensities from an MA catalog entry
QIMVAL	returns image intensity and coordinate at specified pixel
QUXTR	extracts text files from Q,U cubes for input to TARS
REFREQ	Specifies the frequency to be uased as the reference
RFARS	Correct Q/U cubes for Faraday rotation synthesis results
RM	Task to calculate rotation measure and magnetic field
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
RMSD	Calculate rms for each pixel using data in a box around the pixel
RMSLIMIT	selects things with RMS above this limit
RMTFC	Convolves rotation measure transfer function with slab models.
SAD	Finds and fits Gaussians to portions of an image
SCLIM	operates on an image with a choice of mathematical functions
SERCH	Finds line signals in transposed data cube
SHADO	Calculate the shadowing of antennas at the array
SLCOL	Task to collate slice data and models.
SLFIT	Task to fit gaussians to slice data.
SLICE	Task to make a slice file from an image
SMOTH	Task to smooth a subimage from upto a 7-dim. image
SPCOR	Task to correct an image for a primary beam and spectral index

SPECFLUX	Specifies the flux at the reference frequency
SPFIX	Makes cube from input to and output from SPIXR spectral index
SPIXR	Fits spectral indexes to each row of an image incl curvature
SPMOD	Modify UV database by adding a model with spectral lines
SPXMD	adds images of model objects to image cubes in spectral index
STFUN	Task to calculate a structure function image
STVERS	star display table version number
SUMSQ	Task to sum the squared pixel values of overlapping images
TABGET	returns table entry for specified row, column and subscript.
TABPUT	replaces table entry for specified row, column and subscript.
TARPL	Plot input and output text files of the TARS task
TARS	Simulation of Faraday rotation synthesis (mainly task FARS)
TK1SET	Verb to reset 1D gaussian fitting initial guess.
TKAGUESS	Verb to add a plot of the slice model guess directly on TEK
TKAMODEL	Verb to add slice model display directly on TEK
TKASLICE	Verb to add a slice display on TEK from slice file
TKGUESS	Verb to display slice model guess directly on TEK
TKMODEL	Verb to display slice model directly on TEK
TKSET	Verb to set 1D gaussian fitting initial guesses.
TKSLICE	Verb to display slice file directly on TEK
TKVAL	Verb to obtain value under cursor from a slice
TKXY	Verb to obtain pixel value under cursor
TV1SET	Verb to reset 1D gaussian fitting initial guess on TV plot.
TVACOMPS	Verb to add slice model components directly on TV graphics
TVAGUESS	Verb to re-plot slice model guess directly on TV graphics
TVAMODEL	Verb to add slice model display directly on TV graphics
TVARESID	Verb to add slice model residuals directly on TV graphics
TVASLICE	Verb to add a slice display on TV graphics from slice file
TVBLINK	Verb which blinks 2 TV planes, can do enhancement also
TVCOMPS	Verb to display slice model components directly on TV graphics
TVCUBE	Verb to load a cube into tv channel(s) & run a movie
TVDIST	determines spherical distance between two pixels on TV screen
TVGUESS	Verb to display slice model guess directly on TV graphics
TVHLD	Task to load an image to the TV with histogram equalization
TVIEW	Display image cube in all 3 transpositions with rotation & reference
TVMAXFIT	displays fit pixel positions and intensity at maxima on TV
TVMODEL	Verb to display slice model directly on TV graphics
TVRESID	Verb to display slice model residuals directly on TV graphics
TVSAD	Finds and fits Gaussians to portions of an image with interaction
TVSET	Verb to set slice Gaussian fitting initial guesses from TV plot
TVSLICE	Verb to display slice file directly on TV
TVSPC	Display images and spectra from a cube
TVSPX	Fits spectral indexes to each image row, allows interactive edit
UNSPX	Removes spectral index model from a data cube
UVADC	Fourier transforms and corrects a model and adds to uv data.
UVCON	Generate sample UV coverage given a user defined array layout
UVFIT	Fits source models to uv data.
UVGIT	Fits source models to uv data.
UVHIM	Makes image of the histogram on two user-chosen axes
UVMOD	Modify UV database by adding a model incl spectral index
UVSEN	Determine RMS sidelobe level and brightness sensitivity
UVSIM	Generate sample UV coverage given a user defined array layout
WARP	Model warps in Galaxies
XBASL	Fits and subtracts nth-order baselines from cube (x axis)
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
XMOM	Fits one-dimensional moments to each row of an image
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.3 AP

APCLN	Deconvolves images with CLEAN algorithm
APGS	deconvolves image with Gerchberg-Saxton algorithm
APVC	Deconvolves images with van Cittert algorithm
BLING	find residual rate and delay on individual baselines
BPASS	computes spectral bandpass correction table
BSGRD	Task to image beam-switched single-dish data
CALIB	determines antenna calibration: complex gain
CCRES	Removes or restores a CC file to a map with a gaussian beam.
CONPL	Plots AIPS gridding convolution functions
CONVL	convolves an image with a gaussian or another image
CPASS	computes polynomial spectral bandpass correction table
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
FFT	Takes Fourier Transform of an image or images
FRCAL	Faraday rotation self calibration task
FRING	fringe fit data to determine antenna calibration, delay, rate
GUARD	portion of UV plane to receive no data in gridding
HLPCLEAN	Cleaning tasks - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
IM2UV	converts an image to a visibility data set
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
IMFRING	large image delay fitting with IM2CC and OOFRING
IMSCAL	large image self-cal with IM2CC and OOCAL
KRING	fringe fit data to determine antenna calibration, delay, rate
MAXPIXEL	maximum pixels searched for components in Clark CLEAN
NOBAT	Task to lock lower priority users out of the AP
OOCAL	determines antenna complex gain with frequency-dependent models
OOFRING	Fringe fit data to determine calibration with spectral index options
RLDLY	fringe fit data to determine antenna R-L delay difference
RSTOR	Restores a Clean component file to a map with a Gaussian beam.
SCIMG	Full-featured imaging plus self-calibration loop with editing
SCMAP	Imaging plus self-calibration loop with editing
SDGRD	Task to select and image random-position single-dish data
SDIMG	Task to select and image random-position single-dish data
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
TDEPEND	Time-dependent imaging procedure sequence
TDSCANS	Time-dependent imaging procedure sequence: find intervals
TDSSCAN	Time-dependent imaging procedure sequence: find intervals
TDSTEP3	Time-dependent imaging procedure "step 3"
TDSTEP5	Time-dependent imaging procedure sequence: later steps
UVADC	Fourier transforms and corrects a model and adds to uv data.
UVMAP	makes images from calibrated UV data.
VLBABPSS	computes spectral bandpass correction table

13.4 ASTROMET

ASTROMET	Describes the process of astrometric/geodetic reduction in AIPS
FRMAP	Task to build a map using fringe rate spectra
HF2SV	convert HF tables from FRING/MBDLY to form used by Calc/Solve
HFPRT	write HF tables from CL2HF
XTRAN	Create an image with transformed coordinates

13.5 BATCH

```
Type:  Operations to prepare, submit, and monitor batch jobs
Use:   There are two batch streams of AIPS, each capable of
   processing a queue of jobs.  To run a batch job, one must
   first prepare the text of the job in a work file.  This text
   may contain any normal AIPS/POPS statement including RUN,
   except for verbs and tasks related to batch preparation, the
   TV, the TEK4012 green screen, and the tape drives.  When the
   text is ready, it may be submitted to the batch AIPS.  On
   the way, it is tested for errors and is submitted only if
   none are found.  After successful submission, the work file
   and any RUN files involved may be altered without affecting
   the job.  Array processor tasks are allowed only in queue
   #2 and only at night.  They may be submitted at any time,
   however.  Line printer output should be directed to a user
   chosen file (via adverb OUTPRINT).  If OUTPRINT = ' ', all
   tasks and AIPS itself will write to a file named
   PRTFIL:BATCHjjj.nnn, where jjj is the job number in hex and
   nnn is the user number in hex.  Note that all print jobs
   are concatenated into the specified file(s).
Adverbs:
   BATQUE     Number of queue to be used ( 1 or 2 or more )
   JOBNUM     Job number involved (101 - 164, 201 -264, ...)
   BATFLINE   First line number to be editted or listed
   BATNLINE   Number of lines to be listed
Verbs:
   BATCH     Add text to BATQUE work file
   BATCLEAR  Initiate and clear BATQUE work file
   BATLIST   List BATNLINE starting with BATFLINE from BATQUE
             work file
   BATEDIT   Edit text in BATQUE work file starting with line
             BATFLINE (or immediate argument)
   BAMODIFY  Edit text in BATQUE work file in line BATFLINE (or
             immediate argument), character-mode editing.
   SUBMIT    Submit text in BATQUE work file as job for queue
             BATQUE
   JOBLIST   List BATNLINE starting with BATFLINE from text file
             of job JOBNUM
   QUEUES    List jobs submitted, running, and completed in
             queue BATQUE
   UNQUE     Remove JOBNUM from queue, copy text of job to work
             file BATQUE

Batch jobs may also be prepared and submitted outside of AIPS,
using the program BATER.  See HELP BATER.
****************************************************************
```

AIPSB	AIPS main program for executing batch jobs
AIPSC	AIPS main program for testing and queuing batch jobs
BAMODIFY	edits characters in a line of a batch work file
BATCH	starts entry of commands into batch-job work file
BATCLEAR	removes all text from a batch work file
BATEDIT	starts an edit (replace, insert) session on a batch work file
BATER	stand-alone program to prepare and submit batch jobs
BATFLINE	specifies starting line in a batch work file
BATLIST	lists the contents of a batch work file
BATNLINE	specifies the number of lines to process in a batch work file
BATQUE	specifies the desired batch queue

ENDBATCH	terminates input to batch work file
JOBLIST	lists contents of a submitted and pending batch job
JOBNUM	specifies the batch job number
QUEUES	Verb to list all submitted jobs in the job queue
REMQUE	specifies the desired batch queue on a remote computer
UNQUE	remove a given job from the job queue

13.6 CALIBRAT

```
For a lengthy description of the calibration of interferometric
data (VLA and VLB line and continuum) enter:
              HELP CALIBRAT\\
****************************************************************
```

ACCOR	Corrects cross amplitudes using auto correlation measurements
ACFIT	Determine antenna gains from autocorrelations
ACLIP	edits suto-corr data for amplitudes, phases, and weights out of range
ACSCL	Corrects cross amplitudes using auto correlation measurements
ALBUS	Calculate ionospheric delay and Faraday rotation using ALBUS
ANCAL	Places antenna-based Tsys and gain corrections in CL table
ANCHECK	Checks By sign in Antenna files
ANTAB	Read amplitude calibration information into AIPS
ANTENNAS	Antennas to include/exclude from the task or verb
ANTUSE	Antennas to include/exclude from the task or verb
ANTWT	Antenna Weights for UV data correction in Calibration
APCAL	Apply TY and GC tables to generate an SN table
APGPS	Apply GPS-derived ionospheric corrections
ATMCA	Determines delay/phase gradient from calibrator observations
AVERSION	Specify a version of the ALBUS container
BASELINE	specifies which antenna pairs are to be selected/deselected
BASFIT	fits antenna locations from SN-table data
BDAPL	Applies a BD table to another data set
BLAPP	applies baseline-based fringe solutions a la BLAPP
BLAVG	Average cross-polarized UV data over baselines.
BLCAL	Compute closure offset corrections
BLCHN	Compute closure offset corrections on a channel-by-channel basis
BLING	find residual rate and delay on individual baselines
BLPCL	Do divide by I,Q,U models for circular polarization BLCHN
BLPLT	Plots BLCAL tables in 2 dimensions as function of baseline and IF
BLPOLCAL	Do BLCHN for I, Q, U, V models
BLVER	specifies the version of the baseline-calibration table used
BPASS	computes spectral bandpass correction table
BPASS5	Normalization control in BPASS for VLBARUN
BPASSPRM	Control adverb array for bandpass calibration
BPCOR	Correct BP table.
BPEDT	Interactive TV task to edit uv data based on BP tables
BPEPL	Plots bandpass tables overlaying multiple times like BPEDT
BPERR	Print and plot BPASS closure outputs
BPFLG	Flgas uv data based on bad BP values
BPLOT	Plots bandpass tables in 2 dimensions as function of time
BPPLT	Plots selected contents of bandpass (BP) files versus time
BPSMO	Smooths or interpolates bandpass tables to regular times
BPSOLINT	Sets SOLINT in BPASS for VLBARUN
BPVER	specifies the version of the bandpass table to be applied
BPWAY	Determines channel-dependent relative weights
BPWGT	Calibrates data and scales weights by bandpass correction
BSPRT	print BS tables
BSROT	modifies SD beam-switch continuum data for error in throw

CALCODE	specifies the type of calibrator to be selected
CALDIR	lists calibrator source models available as AIPS FITS files
CALIB	determines antenna calibration: complex gain
CALIBRAT	describes the process of data calibration in AIPS
CALIN	specifies name of input disk file usually with calibration data
CALMODEL	Applies SPLIT & UVSUB to make a model data set matching a calibrator
CALRD	Reads calibrator source model-image FITS file
CALSOUR	specifies source names to be included in calibration
CALTASK	Controls which calibration task is used when by VLBARUN
CC2IM	Make model image from a CC file
CENTR	modifies UV data to center the reference channel
CHANSEL	Array of start, stop, increment channel numbers to average
CHREFANT	Name of reference antenna
CLCAL	merges and smooths SN tables, applies them to CL tables
CLCOP	copy CL/SN file calibration between polarizations or IFs
CLCOR	applies user-selected corrections to the calibration CL table
CLCORPRM	Parameter adverb array for task CLCOR
CLINT	CL table entry interval
CLINV	copy CL/SN file inverting the calibration
CLIP	edits data based on amplitudes, phases, and weights out of range
CLSMO	smooths a calibration CL table
CLVLB	Corrects CL table gains for pointing offsets in VLBI data
CMETHOD	specifies the method by which the uv model is computed
CMODEL	specifies the method by which the uv model is computed
CODETYPE	specifies the desired operation or data type
CONFI	Optimize array configuration by minimum side lobes
CPASS	computes polynomial spectral bandpass correction table
CSCOR	applies specified corrections to CS tables
CVEL	shifts spectral-line UV data to a given velocity
DCHANSEL	Array of start, stop, increment channel #S + IF to avoid
DECOR	Measures the decorrelation between channels and IF of uv data
DEFLG	edits data based on decorrelation over channels and time
DELCORR	Controls task actions on calibration tables.
DELZN	Determines residual atmosphere depth at zenith and clock errors
DFCOR	Applies ATMO differential corrections to the calibration CL table
DGAUS	Correct UV model for convolution by Clean beam
DIGICOR	specifies whether VLBA digital corrections are to be applied
DOACOR	specifies whether autocorrelation data are included
DOAPPLY	Flag to indicate whether an operation is applied to the data
DOBAND	specifies if/how bandpass calibration is applied
DOBTWEEN	Controls smoothing between sources in calibration tables
DOCALIB	specifies whether a gain table is to be applied or not
DODELAY	selects solution for phase/amplitude or delay rate/phase
DOFIT	Controls which antennas are fit by what methods
DOFLAG	Controls closure cutoff in gain solutions and flagging
DOOSRO	calibrating amplitude and phase, and imaging VLA data
DOPOL	selects application of any polarization calibration
DOVLAMP	Produces amp calibration file for phased-VLA VLBI data
DT2PD	Write PD table from a PD table text file
DTSIM	Generate fake UV data
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
ELEVLIM	Lower limit on elevation
ELFIT	Plots/fits selected contents of SN, TY, SY, PC or CL files
ELINT	Determines and removes gain dependence on elevation
EOPSFILE	Name of text file containing EOP information
EVACL	Evaluates statistics in closure phase and amplitude
EVASN	Evaluates statistics in SN/CL tables
EVAUV	Subtracts & divides a model into UV data, does statistics on results
FACES	makes images of catalog sources for initial calibration
FARAD	add ionospheric Faraday rotation to CL table
FGPLT	Plots selected contents of FG table

FGPRT	Prints counts of selected portions of an FG table.
FGTAB	writes frequency-range flags to a text file to be read by UVFLG
FINDR	Find normal values for a uv data set
FIXWT	Modify weights to reflect amplitude scatter of data
FLAGR	Edit data based on internal RMS, amplitudes, weights
FLAGVER	selects version of the flagging table to be applied
FLGIT	flags data based on the rms of the spectrum
FQTOL	Frequency tolerance with which FQ or frequency entries are accepted.
FRCAL	Faraday rotation self calibration task
FREQID	Frequency Identifier for frequency, bandwidth combination
FRING	fringe fit data to determine antenna calibration, delay, rate
FTFLG	interactive flagging of UV data in channel-time using the TV
GAINERR	gives estimate of gain uncertainty for each antenna
GAINUSE	specifies output gain table or gain table applied to data
GAINVER	specifies the input gain table
GCPLT	Plots gain curves from text files
GCVER	specifies the version of the gain curve table used
GETJY	determines calibrator flux densities
GPSDL	Calculate ionospheric delay and Faraday rotation corrections
HLPCLEAN	Cleaning tasks - run-time help
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFTFLG	Interactive time-channel visibility Editor - run-time help
HLPIBLED	Interactive Baseline based visibility Editor - run-time help
HLPPCFLG	Interactive time-channel PC table Editor PCFLG - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
HLPSPFLG	Interactive time-channel visibility Editor SPFLG - run-time help
HLPTVFLG	Interactive time-baseline visibility Editor TVFLG - run-time help
HOLIS	Prints information about holography sampling
IANTB	Writes out GC and TY data in ANTAB format
IBLED	Interactive BaseLine based visibility EDitor
ICHANSEL	Array of start, stop, increment channel #S + IF to average
IM2CC	Task to convert an image to multi-facet Clean Components
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
IMFRING	large image delay fitting with IM2CC and OOFRING
IMSCAL	large image self-cal with IM2CC and OOCAL
INDXH	writes index file describing contents of UV data base
INDXR	writes index file describing contents of UV data base
INTERPOL	specifies the type of averaging done on the complex gains
INTPARM	specifies the parameters of the frequency interpolation function
KRING	fringe fit data to determine antenna calibration, delay, rate
LDGPS	load GPS data from an ASCII file
LISTR	prints contents of UV data sets and assoc. calibration tables
LISUN	prints contents of UV data sets with Sun angles
LOCIT	fits antenna locations from SN-table data
LPCAL	Determines instrumental polarization for UV data
MAPBM	Map VLA beam polarization
MBDLY	Fits multiband delays from IF phases, updates SN table
MFIMG	Image the Earth magnetic field model or TEC data used by TECOR
MINAMPER	specifies the minimum amplitude error prior to some action
MINANTEN	states minimum number of antennas for a solution
MINPHSER	specifies the minimum phase error prior to some action
MOD3D	Computes a 3D CC model from a set of facets

MSORT	Sort a UV dataset into a specified order
MULTI	Task to convert single-source to multi-source UV data
NORMALIZ	specifies the type of gain normaliztion if any
OMFIT	Fits sources and, optionally, a self-cal model to uv data
ONEFREQ	states that the current CC model was made with one frequency
OOCAL	determines antenna complex gain with frequency-dependent models
OOFRING	Fringe fit data to determine calibration with spectral index options
OOSRT	Sort a UV dataset into a specified order
OOSUB	Subtracts/divides a model from/into a uv data base
PBEAM	Fits the analytic function to the measured values of the beam
PCABL	Copies the Cable cal values from PC table 1 to PC table n
PCAL	Determines instrumental polarization for UV data
PCASS	Finds amplitude bandpass shape from pulse-cal table data
PCAVG	Averages pulse-cal (PC) tables over time
PCCOR	Corrects phases using PCAL tones data from PC table
PCDIV	Scales pulse-cal amplitudes by Tsys or Psum
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFIT	Finds delays and phases using a pulse-cal (PC) table
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PCLOD	Reads ascii file containing pulse-cal info to PC table.
PCPLT	Plots pulse-cal tables in 2 dimensions as function of time
PCRMS	Finds statistics of a pulse-cal table; flags bad times and channels
PCVEL	shifts spectral-line UV data to a given velocity: planet version
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
PDPLT	Plots selected contents of PD tables
PDVER	specifies the version of the spetral polarization table to use
PEEK	fits pointing model function to output from the VLA
PEELR	calibrates interfering sources in multi-facet imges
PHASPRM	Phase data array, by antenna number.
PIPEAIPS	calibrating amplitude and phase, and imaging VLA data
POLANGLE	Intrinsic polarization angles for up to 30 sources
PPAPP	Applies Right minus Left phase difference to a 2nd data set
PPARM	used by PEELR to list the facets to be "peeled"
PROGRAM	Specify a program to be used
PRTSY	Task to print statistics from the SY table
QBEAM	Plot holography data as contour image and outputs interpolated image
QUFIX	determines Right minus Left phase difference, corrects cal files
QUOUT	writes text file of Q, U versus frequency to be used by RLDIF
REAMP	Scale visibility amplitudes by IF- or subarray-dependent factor
REFANT	Reference antenna number
RESEQ	Renumber antennas
REWGT	modifies UV data re-scaling the weights only
RFI	Look for RFI in uv data
RIFRM	Task to modify a CL and TE table with IFRM values from ALBUS files
RLCAL	Determines instrumental right-left phase versus time (a self-cal)
RLDIF	determines Right minus Left phase difference, corrects cal files
RLDLY	fringe fit data to determine antenna R-L delay difference
ROTMEAS	Tells the rotation measure of a source
SAMPTYPE	Specifies sampling type
SCIMG	Full-featured imaging plus self-calibration loop with editing
SCMAP	Imaging plus self-calibration loop with editing
SDCAL	Task to apply single dish calibration
SDVEL	shifts spectral-line single-dish data to a given velocity
SEARCH	Ordered list of antennas for fring searches
SELBAND	SpecifieS bandwidth of the desired frequency ID
SELFCAL	Requests self-calibration of calibration sources
SELFREQ	Specifies frequency of desired frequency ID
SETJY	Task to enter source info into source (SU) table.
SHAHO	Flags Holography data for shadowing
SHOUV	displays uv data in various ways.
SMODEL	Source model
SMOTYPE	Specifies smoothing

SMRATES	Requests smoothing and clipping of rates after FRING in pipeline
SNBLP	Plots selected contents of SN or CL files on a baseline basis
SNCOR	applies user-selected corrections to the calibration SN table
SNCORPRM	Task-specific parameters for SNCOR.
SNDUP	copies and duplicates SN table from single pol file to dual pol
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
SNFIT	Fits parabola to SN amplitudes and plots result
SNFLG	Writes flagging info based on the contents of SN files
SNIFS	Plots selected contents of SN, TY, SY, PC or CL files by IF
SNP2D	Task to convert SN table single-channel phase to delay
SNPLT	Plots selected contents of SN, SY, TY, PC or CL files versus time
SNREF	Chooses best reference antenna to minimize R-L differences
SNRMS	Print statistics for selected contents of SN, SY, TY, PC or CL files
SNSMO	smooths and filters a calibration SN table
SNVER	specifies the output solution table
SOLCL	adjust gains for solar data according to nominal sensitivity
SOLCON	Gain solution constraint factor
SOLINT	Solution interval
SOLMIN	Minimum number of solution sub-intervals in a solution
SOLMODE	Solution mode
SOLSUB	Solution sub-interval
SOLTYPE	Solution type
SOUCODE	Calibrator code for source, not calibrator, selection
SOUSP	fits source spectral index from SU table or adverbs
SPCAL	Determines instrumental polzn. for spec. line UV data
SPECINDX	Spectral index used to correct calibrations
SPECPARM	Spectral index per polarization per source
SPECTRAL	Flag to indicate whether an operation is spectral or continuum
SPECURVE	Spectral index survature used to correct calibrations
SPFLG	interactive flagging of UV data in channel-TB using the TV
SPLAT	Applies calibration and splits or assemble selected sources.
SPLIT	converts multi-source to single-source UV files w calibration
STATIONS	GPS stations used by ALBUS from 3 Sept, 2024
SY2TY	Task to generate a TY extension file from an EVLA SY table
SYPRT	Task to print values from the SY table
SYSOL	undoes and re-does nominal sensitivity application for Solar data
SYVSN	Plots selected SY/TY data with SN solution values versus time
TASAV	Task to copy all extension tables to a dummy uv or map file
TAUO	Opacities by antenna number
TDEPEND	Time-dependent imaging procedure sequence
TECOR	Calculate ionospheric delay and Faraday rotation corrections
TECRFILE	Name of file containg TEC data for use in TECOR
TECRTYPE	Type of IONEX file to download in VLA and VLBA TECR procedures
TEPLT	Plots selected contents of TE (TECOR) parameter tables
TIME2	used by VLBAMPCL as the time range for a second calibrator scan
TIMSMO	Specifiessmoothing times
TLCAL	Converts JVLA telcal files to an SN file
TRECVR	Receiver temperatures by polarization and antenna
TRIANGLE	specifies closure triangles to be selected/deselected
TRUEP	determines true antenna polarization from special data sets
TVFLG	interactive flagging of UV data using the TV
TYAPL	undoes and re-does nominal sensitivity application
TYCOP	copy TY or SY table calibration between IFs
TYSMO	smooths and filters a calibration TY or SY table
TYSMOLEV	Clip level to use in running TYSMO on a VLB TY table
TYVER	specifies the version of the system temperature table used
UNCAL	sets up tables for uncalibrating Australia Telescope data
USUBA	Assign subarrays within a uv-data file
UVCRS	Finds the crossing points of UV-ellipses.
UVFIT	Fits source models to uv data.
UVFLG	Flags UV-data
UVGIT	Fits source models to uv data.

UVHOL	Prints holography data from a UV data base with calibration
UVMLN	edits data based on the rms of the spectrum
UVPRT	prints data from a UV data base with calibration
UVSRT	Sort a UV dataset into a specified order
UVSUB	Subtracts/divides a model from/into a uv data base
VBCAL	Scale visibility amplitudes by antenna based constants
VHCAL	Do divide by I,Q,U models for linear polarization data
VHCALIB	Do CALIB for linear polarization with I, Q, U models
VHDIF	find/apply V minus H linear polarization phase difference
VHMOD	Compute linear polarization point source model, applies to data
VLABP	VLA antenna beam polarization correction for snapshot images
VLACALIB	Runs CALIB and LISTR for VLA observation
VLACLCAL	Runs CLCAL and prints the results with LISTR
VLALIST	Runs LISTR for VLA observation
VLAMODE	VLA observing mode
VLAMP	Makes ANTAB file for phased VLA used in VLBI observations
VLANT	applies VLA/EVLA antenna position corrections from OPs files
VLAOBS	Observing program or part of observer's name
VLAPROCS	Procedures to simplify the reduction of VLBA data
VLARESET	Reset calibration tables to a virginal state
VLARUN	Calibrating amplitude and phase, and imaging VLA data
VLBAAMP	applies a-priori amplitude corrections to VLBA data
VLBABPSS	computes spectral bandpass correction table
VLBACALA	applies a-priori amplitude corrections to VLBA data
VLBACCOR	applies a-priori amplitude corrections to VLBA data
VLBAEOPS	Corrects Earth orientation parameters
VLBAFQS	Copies different FQIDS to separate files
VLBAFRGP	Fringe fit phase referenced data and apply calibration
VLBAFRNG	Fringe fit data and apply calibration
VLBAKRGP	Fringe fit phase referenced data and apply calibration
VLBAKRNG	Fringe fit data and apply calibration
VLBAMCAL	Merges redundant calibration data
VLBAMPCL	Calculates and applies manual instrumental phase calibration
VLBAMPHC	applies VLBARUN calibration to additional phase stopping centers
VLBAPANG	Corrects for parallactic angle
VLBAPCOR	Calculates and applies instrumental phase calibration
VLBARFI	Calibrates VLBA autocorrelations, writes out statistics
VLBARUN	applies amplitude and phase calibration procs to VLBA data
VLBATECR	Calculate ionospheric delay and Faraday rotation corrections
VLBAUTIL	Procedures to simplify the reduction of VLBA data
VLBAWIDE	Calibrates all VLA wide-band autocorrelations with VLBARFI
VLBCD	Reads ascii file containing VLBA calibration info into a CD table
VLBSY	Reads ascii file containing VLBA total power info into an SY table
VLOG	Pre-process external VLBA calibration files
WEIGHTIT	Controls modification of weights before gain/fringe solutions
WETHR	Plots selected contents of WX tables, flags data based on WX
WRTPROCS	Procedures to simplify the reduction of VLBA data
WTTHRESH	defines the weight threshold for data acceptance
WTUV	Specifies the weight to use for UV data outside UVRANGE
WXLOD	Reads KEYIN-format weather information making WX table
XYDIF	find/apply X minus Y linear polarization phase difference
XYMOD	Compute linear polarization point source model, applies to data

13.7 CATALOG

ACTNOISE	puts estimate of actual image uncertainty and zero in header
ADDBEAM	Inserts clean beam parameters in image header
ADDDISK	makes a computer's disks available to the current AIPS session
ALLDEST	Delete a group or all of a users data files
ALTDEF	Sets frequency vs velocity relationship into image header
ALTSWTCH	Switches between frequency and velocity in image header
ARESTORE	Restores back up tapes of users data
AX2REF	Second reference pixel number
AXDEFINE	Define or modify an image axis description
AXINC	Axis increment - change in coordinate between pixels
AXREF	Reference pixel number
AXTYPE	Type of coordinate axis
AXVAL	Value of axis coordinate at reference pixel
BAKLD	reads all files of a catalog entry from BAKTP tape
BAKTP	writes all files of a catalog entry to tape in host format
CATALOG	list one or more entries in the user's data directory
CATNO	Specifies AIPS catalog slot number range
CELGAL	switches header between celestial and galactic coordinates
CHKNAME	Checks for existence of the specified image name
CLNUP	removes old MS, RL, SG, TG and ?? files from AIPS disks
CLR2NAME	clears adverbs specifying the second input image
CLR3NAME	clears adverbs specifying the third input image
CLR4NAME	clears adverbs specifying the fourth input image
CLR5NAME	clears adverbs specifying the fifth input image
CLRNAME	clears adverbs specifying the first input image
CLRONAME	clears adverbs specifying the first output image
CLRSTAT	remove any read or write status flags on a directory entry
COODEFIN	Define or modify an image axis coordinate description
COOINC	Celestial axes increment: change in coordinate between pixels
COOREF	Reference pixel number for two coordinate axes
COOTYPE	Celestial axes projection type
DAYNUMBR	finds day nuumber of an image or uv data set
DISKU	shows disk use by one or all users
DOALPHA	specifies whether some list is alphabetized
DOCAT	specifies whether the output is saved (cataloged) or not
DOCC	Adverb to control application to Clean component files
DOHIST	selects a histogram display or controls writing of history file
DOOUTPUT	selects whether output image or whatever is saved / discarded
EGETHEAD	returns parameter value from image header and error code
EGETNAME	fills in input name adverbs by catalog slot number, w error
EPOSWTCH	Switches between B1950 and J2000 coordinates in header
ERROR	was there an error
EXTDEST	deletes one or more extension files
EXTLIST	lists detailed information about contents of extension files
GET2NAME	fills 2nd input image name parameters by catalog slot number
GET3NAME	fills 3rd input image name parameters by catalog slot number
GET4NAME	fills 4th input image name parameters by catalog slot number
GET5NAME	fills 5th input image name parameters by catalog slot number
GETHEAD	returns parameter value from image header
GETNAME	fills 1st input image name parameters by catalog slot number
GETONAME	fills 1st output image name parameters by catalog slot number
GETVERS	finds maximum version number of an extension file
HGEOM	interpolates image to different gridding and/or geometry
HIEND	End record number in a history-file operation
HINOTE	adds user-generated lines to the history extension file

HISTART	Start record number in a history-file operation
HITEXT	writes lines from history extension file to text file
IM2HEAD	displays the image 2 header contents to terminal, message file
IM3HEAD	displays the image 3 header contents to terminal, message file
IM4HEAD	displays the image 4 header contents to terminal, message file
IM5HEAD	displays the image 5 header contents to terminal, message file
IMDIST	determines spherical distance between two pixels
IMHEADER	displays the image header contents to terminal, message file
IMOHEAD	displays the output image header contents
IMPOS	displays celestial coordinates selected by the TV cursor
IMVAL	returns image intensity and coordinate at specified pixel
IN2CLASS	specifies the ”class” of the 2nd input image or data base
IN2DISK	specifies the disk drive of the 2nd input image or data base
IN2EXT	specifies the type of the 2nd input extension file
IN2NAME	specifies the ”name” of the 2nd input image or data base
IN2SEQ	specifies the sequence # of the 2nd input image or data base
IN2TYPE	specifies the type of the 2nd input image or data base
IN2VERS	specifies the version number of the 2nd input extension file
IN3CLASS	specifies the ”class” of the 3rd input image or data base
IN3DISK	specifies the disk drive of the 3rd input image or data base
IN3EXT	specifies the type of the 3rd input extension file
IN3NAME	specifies the ”name” of the 3rd input image or data base
IN3SEQ	specifies the sequence # of the 3rd input image or data base
IN3TYPE	specifies the type of the 3rd input image or data base
IN3VERS	specifies the version number of the 3rd input extension file
IN4CLASS	specifies the ”class” of the 4th input image or data base
IN4DISK	specifies the disk drive of the 4th input image or data base
IN4NAME	specifies the ”name” of the 4th input image or data base
IN4SEQ	specifies the sequence # of the 4th input image or data base
IN4TYPE	specifies the type of the 4th input image or data base
IN4VERS	specifies the version number of the 4th input extension file
IN5CLASS	specifies the ”class” of the 5th input image or data base
IN5DISK	specifies the disk drive of the 5th input image or data base
IN5NAME	specifies the ”name” of the 5th input image or data base
IN5SEQ	specifies the sequence # of the 5th input image or data base
IN5TYPE	specifies the type of the 5th input image or data base
IN5VERS	specifies the version number of the 5th input extension file
INCLASS	specifies the ”class” of the 1st input image or data base
INDISK	specifies the disk drive of the 1st input image or data base
INEXT	specifies the type of the 1st input extension file
INNAME	specifies the ”name” of the 1st input image or data base
INSEQ	specifies the sequence # of the 1st input image or data base
INTYPE	specifies the type of the 1st input image or data base
INVERS	specifies the version number of the 1st input extension file
KEYSTRNG	gives contents of character-valued keyword parameter
KEYTYPE	Adverb giving the keyword data type code
KEYVALUE	gives contents of numeric-valued keyword parameter
KEYWORD	gives name of keyword parameter - i.e. name of header field
LGEOM	regrids images with rotation, shift using interpolation
M2CAT	displays images in the user's catalog directory for IN2DISK
M3CAT	displays images in the user's catalog directory for IN3DISK
M4CAT	displays images in the user's catalog directory for IN4DISK
M5CAT	displays images in the user's catalog directory for IN5DISK
MAXVERS	The maximum version number of a specified extension file type
MCAT	lists images in the user's catalog directory on disk INDISK
MOCAT	displays images in the user's catalog directory for OUTDISK
MOVE	Task to copy or move data from one user or disk to another
NAMEGET	fills 1st input image name parameters by default matching
OUT2CLAS	The class of a secondary output file
OUT2DISK	The disk number of a secondary output file.

OUT2NAME	The name of a secondary output file.
OUT2SEQ	The sequence of a secondary output file.
OUTCLASS	The class of an output file
OUTDISK	The disk number of an output file.
OUTNAME	The name of an output file.
OUTSEQ	The sequence of an output file.
OUTVERS	The output version number of an extension file (table).
PCAT	Verb to list entries in the user's catalog (no log file).
PLVER	specifies the version number of a PL extension file
PRTHI	prints selected contents of the history extension file
PUTHEAD	Verb to modify image header parameters.
Q2HEADER	Verb to summarize the image 2 header: positions at center
Q3HEADER	Verb to summarize the image 3 header: positions at center
Q4HEADER	Verb to summarize the image 4 header: positions at center
Q5HEADER	Verb to summarize the image 5 header: positions at center
QGETVERS	finds maximum version number of an extension file quietly
QHEADER	Verb to summarize the image header: positions at center
QOHEADER	Verb to summarize the output image header: center positions
QUAL	Source qualifier
RECAT	Verb to compress the entries in a catalog file
REMDISK	removes a computer's disks from the current AIPS session
RENAME	Rename a file (UV or Image)
RENUMBER	Verb to change the catalog number of an image.
RESCALE	Verb to modify image scale factor and offset
REVERSN	checks disk for presence of extension files
SCAT	lists scratch files in the user's catalog directory on all disks
SCRDEST	Verb to destroy scratch files left by bombed tasks.
SLOT	Specifies AIPS catalog slot number
STALIN	revises history by deleting lines from history extension file
STARTTV	Restarts XAS (TV), MS, TK servers that have disappered
TVDIST	determines spherical distance between two pixels on TV screen
TVRESTOR	Restarts XAS (TV), MS, TK servers that have disappered
U2CAT	list a user's UV and scratch files on disk IN2DISK
U3CAT	list a user's UV and scratch files on disk IN3DISK
U4CAT	list a user's UV and scratch files on disk IN4DISK
U5CAT	list a user's UV and scratch files on disk IN5DISK
UCAT	list a user's UV and scratch files on disk INDISK
UOCAT	list a user's UV and scratch files on disk OUTDISK
USERID	User number
ZAP	Delete a catalog entry and its extension files

13.8 COORDINA

ALTDEF	Sets frequency vs velocity relationship into image header
ALTSWTCH	Switches between frequency and velocity in image header
CODECIML	Convert between decimal and sexagesimal coordinate values
COODEFIN	Define or modify an image axis coordinate description
COORDINA	Array to hold coordinate values
COPIXEL	Convert between physical and pixel coordinate values
COSTAR	Verb to plot a symbol at given position on top of a TV image
COTVLOD	Proc to load an image into a TV channel about a coordinate
COWINDOW	Set a window based on coordinates
EPOCONV	Convert between J2000 and B1950 coordinates
EPOSWTCH	Switches between B1950 and J2000 coordinates in header
FRMAP	Task to build a map using fringe rate spectra
FSHIFT	specifies a position shift - output from fitting routines
NAXIS	Axis number
OBEDT	Task to flag data of orbiting antennas

OBTAB	Recalculate orbit parameters and other spacecraft info
PIX2VAL	An image value in the units specified in the header.
PIX2XY	Specifies a pixel in an image
RASHIFT	Shift in RA
REGRD	Regrids an image from one co-ordinate frame to another
RESTFREQ	Rest frequency of a transition
ROTATE	Specifies a rotation
SHIFT	specifies a position shift
SKYVE	Regrids a DSS image from one co-ordinate frame to another
SYSVEL	Systemic velocity
VELDEF	Specifies velocity definition
VELTYP	Velocity frame of reference
XINC	increment associated with an array of numbers
XPARM	General adverb for up to 10 parameters, may refer to X coord
XTRAN	Create an image with transformed coordinates
XTYPE	X axis (U) convolving function type
XYRATIO	Ratio of X to Y units per pixel
ZINC	Set the increment of the third axis
ZXRATIO	Ratio between Z axis (pixel value) and X axis

13.9 EDITING

ACLIP	edits suto-corr data for amplitudes, phases, and weights out of range
BPEDT	Interactive TV task to edit uv data based on BP tables
BPFLG	Flgas uv data based on bad BP values
CLIP	edits data based on amplitudes, phases, and weights out of range
CROWDED	allows a task to perform its function in a crowded fashion
DEFLG	edits data based on decorrelation over channels and time
DOCLIP	Controls whether and how a CLIP operation is performed
DOFLAG	Controls closure cutoff in gain solutions and flagging
DOPLOT	Controls plotting of something
DOROBUST	Controls method of averaging - simple mean/rms or robust
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
EXPERT	specifies an user experience level or mode
FGCNT	Counts samples comparing two flag tables or detailed count from ¡= 1
FGDIF	Compares affect of 2 FG tables
FGSPW	Flags bad spectral windows
FGTAB	writes frequency-range flags to a text file to be read by UVFLG
FINDR	Find normal values for a uv data set
FLAGR	Edit data based on internal RMS, amplitudes, weights
FLGIT	flags data based on the rms of the spectrum
FTFLG	interactive flagging of UV data in channel-time using the TV
GETITIME	Verb to return the UV data integration time.
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFTFLG	Interactive time-channel visibility Editor - run-time help
HLPUFLAG	Edit uv-data on a grid UFLAG - run-time help
HLPWIPER	edit uv data from UVPLT-like plot WIPER - run-time help

IBLED	Interactive BaseLine based visibility EDitor
INTTIME	adds user-generated lines to the history extension file
ISCALIB	states that the current source is a point-source calibrator
NOISE	estimates the noise in images, noise level cutoff
OFLAG	uses on-line flag table information to write a flag table
OUTFGVER	selects version of the flagging table to be written
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
REASON	The reason for an operation
REFLG	Attempts to compress a flag table
RFI	Look for RFI in uv data
RFLAG	Flags data set based on time and freq rms in fringe visibilities
SCANLENG	specify length of "scan"
SCIMG	Full-featured imaging plus self-calibration loop with editing
SCMAP	Imaging plus self-calibration loop with editing
SCUTOFF	noise level cutoff
SDLSF	least squares fit to channels and subtracts from SD uv data
SHAHO	Flags Holography data for shadowing
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
SNFLG	Writes flagging info based on the contents of SN files
SPFLG	interactive flagging of UV data in channel-TB using the TV
TABED	Task to edit tables
TAFLG	Flags data in a Table extension file
TVFLG	interactive flagging of UV data using the TV
UFLAG	Plots and edits data using a uv-plane grid and the TV
UVFLG	Flags UV-data
UVFND	prints selected data from UV data set to search for problems
UVLIN	Fits and removes continuum visibility spectrum, also can flag
UVLSD	least squares fit to channels and divides the uv data.
UVLSF	least squares fit to channels and subtracts from uv data.
UVMLN	edits data based on the rms of the spectrum
VPFLG	Resets flagging to all or all corss-hand whenever some are flagged
WETHR	Plots selected contents of WX tables, flags data based on WX
WIPER	plots and edits data from a UV data base using the TV

13.10 EXT-APPL

BSPRT	print BS tables
GETTHEAD	Returns keyword values from a table header, also column #, # rows
MF2ST	Task to generate an ST ext. file from Model Fit ext. file
PRTSY	Task to print statistics from the SY table
PUTTHEAD	inserts a given value into a table keyword/value pair
SY2TY	Task to generate a TY extension file from an EVLA SY table
SYPRT	Task to print values from the SY table
TABGET	returns table entry for specified row, column and subscript.
TABPUT	replaces table entry for specified row, column and subscript.

13.11 FITS

CALRD	Reads calibrator source model-image FITS file
CALWR	writes calibrator source model images w CC files to FITS disk files
DATAIN	specifies name of input FITS disk file
DATAOUT	specifies name of output FITS disk file
FILEZAP	Delete an external file
FIT2A	reads the fits input file and records it to the output ascii file
FITAB	writes images / uv data w extensions to tape in FITS format
FITDISK	writes images / uv data w extensions to disk in FITS format
FITLD	Reads FITS files to load images or UV (IDI or UVFITS) data to disk
FITTP	writes images / uv data w extensions to tape in FITS format
IMLOD	Reads tape or disk files to load images to disk
MPDIFS	Retains comparison differences between current images and master ones
OLDVOL	used by READISK to specify the disk number when WRITDISK was run
READISK	Reads images / uv data w extensions in FITS format into AIPS
TCOPY	Tape to tape copy with some disk FITS support
TERSE	Controls the amount of information printed by the Y2K tests
UVLOD	Read export or FITS data from a tape or disk
VLBALOAD	Loads VLBA data
WRTDISK	writes images / uv data w extensions to disk in FITS format
WRTPROCS	Procedures to simplify the reduction of VLBA data
Y2KDISK	Specifies logical name of disk area for Y2K to read or write
Y2KFILE	File name of the current Y2K disk file
Y2KSIZE	Specifies the size of the Y2K test to be run

13.12 GENERAL

ABORTASK	stops a running task
ABOUT	displays lists and information on tasks, verbs, adverbs
AIPS	AIPS main program for interactive use
AIPSB	AIPS main program for executing batch jobs
ANTNAME	A list of antenna (station) names
APARM	General numeric array adverb used many places
BADDISK	specifies which disks are to be avoided for scratch files
BATCHJOB	Information about BATCH
BCOUNT	gives beginning location for start of a process
BITER	gives beginning point for some iterative process
BLC	gives lower-left-corner of selected subimage
BPARM	general numeric array adverb used too many places
CATEGORY	List of allowed primary keywords in HELP files
CLNUP	removes old MS, RL, SG, TG and ?? files from AIPS disks
CLRMSG	deletes messages from the user's message file
COMMENT	64-character comment string
CPARM	general numeric array adverb used many places
CPUTIME	displays curren tcpu and real time usage of the AIPS task
CROWDED	allows a task to perform its function in a crowded fashion
DCODE	General string adverb
DDISK	Deterimins where input Y2K data are found
DECIMAL	specifies if something is in decimal format
DETIME	specifies a time interval for an operation (destroy, batch)
DISKU	shows disk use by one or all users
DOALL	specifies if an operation is done once or for all matching
DOCONFRM	selects user confirmation modes of repetitive operation
DOKEEP	specifies if something is kept or deleted
DOSCALE	specifies if a scaling operation of some sort is to be performed
DOSCAN	specifies if a scan-related operation is to be done

DOWAIT	selects wait-for-completion mode for running tasks
DOWEIGHT	selects operations with data weights
DPARM	General numeric array adverb used many places
DRCHK	stand-alone program checks system setup files for consistency
ECOUNT	give the highest count or iteration for some process
EDGSKP	Deterimins border excluded from comparision or use
EHEX	converts decimal to extended hex
EXPERT	specifies an user experience level or mode
EXPLAIN	displays help + extended information describing a task/symbol
FILEZAP	Delete an external file
FPARM	General numeric array adverb used in modeling
FREESPAC	displays available disk space for AIPS in local system
GET	restores previously SAVEd full POPS environment
GETDATE	Convert the current date and time to a string
GNUGPL	Information about GNU General Public License for AIPS
GO	starts a task, detaching it from AIPS or AIPSB
GRADDRES	specifies user's home address for replies to gripes
GRDROP	deletes the specified gripe entry
GREMAIL	gives user's e-mail address name for reply to gripe entry
GRINDEX	lists users and time of all gripe entries
GRIPE	enter a suggestion or bug report for the AIPS programmers
GRIPR	standalone program to enter suggestions/complaints to AIPS
GRLIST	lists contents of specified gripe entry
GRNAME	gives user's name for reply to gripe entry
GRPHONE	specifies phone number to call for questions about a gripe
HELP	displays information on tasks, verbs, adverbs
HINOTE	adds user-generated lines to the history extension file
HITEXT	writes lines from history extension file to text file
IN2FILE	specifies name of a disk file, outside the regular catalog
INFILE	specifies name of a disk file, outside the regular catalog
INTEXT	specifies name of input text file, not in regular catalog
IOTAPE	Deterimins which tape drive is used during a Y2K RUN
LSAPROPO	Data input to APROPO to find what uses what words
MDISK	Determins where input Y2K data are found
MSGKILL	turns on/off the recording of messages in the message file
MSGSERVER	Information about the X11-based message server
MSGSRV	Information about the X11-based message server
NBOXES	Number of boxes
NCCBOX	Number of clean component boxes
NCOUNT	General adverb, usually a count of something
NITER	The number of iterations of a process.
NPOINTS	General adverb giving the number of something
NTHREAD	Controls number of threads used by multi-threaded processes in OBIT
OBJECT	The name of an object
OFFSET	General adverb, the offset of something.
OPCODE	General adverb, defines an operation
OPTELL	The operation to be passed to a task by TELL
OPTYPE	General adverb, defines a type of operation.
ORDER	Adverb used usually to specify the order of polynomial fit
OTFBS	Translates on-the-fly continuum SDD format to AIPS UV file
OTFUV	Translates on-the-fly single-dish SDD format to AIPS UV file
OUTFILE	specifies name of output disk file, not in regular catalog
OUTTEXT	specifies name of output text file, not in regular catalog
OUTVERS	The output version number of an extension file (table).
PANIC	Instructions for what to do when things go wrong
PIX2VAL	An image value in the units specified in the header.
PIXRANGE	Range of pixel values to display
PIXVAL	Value of a pixel
POSTSCRIP	General comments about AIPS use of PostScript incl macros

PRTAC	prints contents and summaries of the accounting file
PRTASK	Task name selected for printed information
PRTHI	prints selected contents of the history extension file
PRTLIMIT	specifies limits to printing functions
PRTMSG	prints selected contents of the user's message file
QUAL	Source qualifier
READLINE	Information about AIPS use of the GNU readline library.
REBYTE	service program to transform byte order of full data sets
REHEX	converts extended hex string to decimal
ROTATE	Specifies a rotation
RPARM	General numeric array adverb used in modeling
RTIME	Task to test compute times
SCALR1	General adverb
SCALR2	General adverb
SCALR3	General adverb
SECONDARY	List of allowed secondary keywords in HELP files
SECONDRY	List of allowed secondary keywords in HELP files
SOURCES	A list of source names
SPARM	General string array adverb
SRCALIAS	A list of source names, used as an alias
SRCNAME	A single source name
STALIN	revises history by deleting lines from history extension file
STRA1	General string adverb
STRA2	General string adverb
STRA3	General string adverb
STRB1	General string adverb
STRB2	General string adverb
STRB3	General string adverb
STRC1	General string adverb
STRC2	General string adverb
STRC3	General string adverb
SUBARRAY	Subarray number
SYMBOL	General adverb, probably defines a plotting symbol type
SYS2COM	specifies a command to be sent to the operating system
SYSCOM	specifies a command to be sent to the operating system
SYSOUT	specifies the output device or file used by the system
SYSTEM	Verb to send a command to the operating system
TCODE	Deterimins which type of Y2K is RUN.
TDISK	Deterimins where output Y2K data is placed
TELL	Send parameters to tasks that know to read them on the fly
TGREP	finds all user numbers which have used specified task
THEDATE	contains the date and time in a string form
TIMERANG	Specifies a time range
TMASK	Deterimins which tasks are executed when a Y2K is RUN.
TMODE	Deterimins which input is used when a Y2K is RUN.
TNAMF	Internal variable for Y2K test suite
TPMON	Information about the TPMON "Daemon"
VCODE	General string adverb
VLBDDT	Verification tests using simulated data
VPARM	General numeric array adverb used in modeling
WHATSNEW	lists changes and new code in the last several AIPS releases
XHELP	Accesses hypertext help system
XPARM	General adverb for up to 10 parameters, may refer to X coord
XTYPE	X axis (U) convolving function type
Y2K	verifies correctness and performance using standard problems
Y2KSAVE	verifies correctness and performance using standard problems
YINC	Y axis increment
YTYPE	Y axis (V) convolving function type

13.13 HARDCOPY

BPRINT	gives beginning location for start of a printing process
BSPRT	print BS tables
DOCELL	selects units of cells over angular unit
EPRINT	gives location for end of a printing process
FACTOR	scales some display or CLEANing process
FGPRT	Prints counts of selected portions of an FG table.
FLMCOMM	Comment for film recorder image.
HIEND	End record number in a history-file operation
HISTART	Start record number in a history-file operation
HOLIS	Prints information about holography sampling
INTEXT	specifies name of input text file, not in regular catalog
ISPEC	Plots and prints spectrum of region of a cube
NPLOTS	gives number of plots per page or per job
NPRINT	gives number of items to be printed
OTFIN	Lists on-the-fly single-dish SDD format data files
OUTFILE	specifies name of output disk file, not in regular catalog
OUTPRINT	Specifies name of disk file to keep the printer output
OUTTEXT	specifies name of output text file, not in regular catalog
PLRFI	Plots spectral statistics from output of VBRFI & VLBRF
POSTSCRIP	General comments about AIPS use of PostScript incl macros
PRINTER	Verb to set or show the printer(s) used
PRIORITY	Limits prioroty of messages printed
PRNUMBER	POPS number of messages
PRRFI	Prints excess spectral statistics from output of VBRFI & VLBRF
PRSTART	First record number in a print operation
PRTASK	Task name selected for printed information
PRTIME	Time limit
PRTLEV	Specifies a code for the amount of information requested.
PRTSD	prints contents of AIPS single-dish data sets
PRTUV	prints contents of a visibility (UV) data set
REASON	The reason for an operation
RGBGAMMA	specifies the desired color gamma corrections
RSPEC	Plots and prints spectrum of rms of a cube
TVCPS	Task to copy a TV screen-image to a PostScript file.
TVDIC	Task to copy a TV screen-image to a Dicomed film recorder.
UVFND	prints selected data from UV data set to search for problems
UVHOL	Prints holography data from a UV data base with calibration
UVPRT	prints data from a UV data base with calibration
VBRFI	Plots spectral statistics of VLBA autocorrelation data for RFI
VLBRF	Plots spectral statistics of VLBA autocorrelation data for RFI

13.14 IMAGE-UT

BDROP	gives number of pooints dropped at the beginning
BSGEO	Beam-switched Az-El image to RA-Dec image translation
CALWR	writes calibrator source model images w CC files to FITS disk files
DOMODEL	selects display of model function
DORESID	selects display of differences between model and data
DOSLICE	selects display of slice data
DSKEW	Geometric interpolation correction for skew
EDROP	number of points/iterations to be omitted from end of process
FIT2A	reads the fits input file and records it to the output ascii file
FITAB	writes images / uv data w extensions to tape in FITS format
FITDISK	writes images / uv data w extensions to disk in FITS format

FITTP	writes images / uv data w extensions to tape in FITS format
HLPTVHUI	Interactive intensity-hue-saturation display - run-time help
HLPTVIEW	Interactive display of cube in 3 transpositions - run-time help
HLPTVRGB	Interactive red-green-blue display - run-time help
HLPTVSPC	Interactive display of spectra from a cube - run-time help
IMCLP	Clip an image to a specified range.
IMLOD	Reads tape or disk files to load images to disk
OGEOM	Simple image rotation, scaling, and translation
OHGEO	Geometric interpolation with correction for 3-D effects
READISK	Reads images / uv data w extensions in FITS format into AIPS
TVIEW	Display image cube in all 3 transpositions with rotation & reference
TVSPC	Display images and spectra from a cube
WRTDISK	writes images / uv data w extensions to disk in FITS format
WRTPROCS	Procedures to simplify the reduction of VLBA data

13.15 IMAGE

CPYRT	replaces history with readme file, inserts copyright
IMRMS	Plot IMEAN rms answers
MAPBM	Map VLA beam polarization
NANS	reads an image or a UV data set and looks for NaNs
PROFL	Generates plot file for a profile display.
STRAN	Task compares ST tables, find image coordinates (e.g. guide star)
VLABP	VLA antenna beam polarization correction for snapshot images
XSMTH	Smooth data along the x axis
XSUM	Sum or average images on the x axis
XTRAN	Create an image with transformed coordinates

13.16 IMAGING

AHIST	Task to convert image intensities by adaptive histogram
ALLOKAY	specifies that initial conditions have been met.
APCLN	Deconvolves images with CLEAN algorithm
APGS	deconvolves image with Gerchberg-Saxton algorithm
APVC	Deconvolves images with van Cittert algorithm
AVOPTION	Controls type or range of averaging done by a task
BCOMP	gives beginning component number for multiple fields
BLC	gives lower-left-corner of selected subimage
BLWUP	Blow up an image by any positive integer factor.
BMAJ	gives major axis size of beam or component
BMIN	gives minor axis size of beam or component
BOX	specifies pixel coordinates of subarrays of an image
BOX2CC	Converts CLBOX in pixels to CCBOX in arc seconds
BOXES	Adds Clean boxes to BOXFILE around sources.
BOXFILE	specifies name of Clean box text file
BPA	gives position angle of major axis of beam or component
BSAVG	Task to do an FFT-weighted sum of beam-switched images
BSCLN	Hogbom Clean on beam-switched difference image
BSGRD	Task to image beam-switched single-dish data
BSMAP	Images weak sources with closure phases
CANDY	user-definable (paraform) task to create an AIPS image
CCBOX	specifies pixel coordinates of subarrays of an image
CCEDT	Select CC components in BOXes and above mininum flux.
CCFND	prints the contents of a Clean Components extension file.
CCGAU	Converts point CLEAN components to Gaussians
CCMOD	generates clean components to fit specified source model

CCMRG	sums all clean components at the same pixel
CCRES	Removes or restores a CC file to a map with a gaussian beam.
CELLSIZE	gives the pixel size in physical coordinates
CHKFC	makes images of Clean boxes from Boxfile
CLBOX	specifies subarrays of an image for Clean to search
CMETHOD	specifies the method by which the uv model is computed
CMODEL	specifies the method by which the uv model is computed
COHER	Baseline Phase coherence measurement
CONPL	Plots AIPS gridding convolution functions
CONVL	convolves an image with a gaussian or another image
CUTOFF	specifies a limit below or above which the operation ends
CXCLN	Complex Hogbom CLEAN
CXIMAGR	Grid UV data into a complex image, Fourier transform, Clean
DCONV	deconvolves a gaussian from an image
DECSHIFT	gives Y-coordinate shift of an image center from reference
DELBOX	Verb to delete boxes with TV cursor & graphics display.
DFILEBOX	Verb to delete Clean boxes with TV cursor & write to file
DO3DIMAG	specifies whether uvw's are reprojected to each field center
DOGRIDCR	selects correction for gridding convolution function
DOOSRO	calibrating amplitude and phase, and imaging VLA data
DRAWBOX	Verb to draw Clean boxes on the display
DTSUM	Task to provide a summary of the contents of a dataset
EVAUV	Subtracts & divides a model into UV data, does statistics on results
FACES	makes images of catalog sources for initial calibration
FACTOR	scales some display or CLEANing process
FETCH	Reads an image from an external text file.
FFT	Takes Fourier Transform of an image or images
FGAUSS	Minimum flux to Clean to by widths of Gaussian models
FILEBOX	Verb to reset Clean boxes with TV cursor & write to file
FILIT	Interactive BOXFILE editing with facet images
FIXBX	converts a BOXFILE to another for input to IMAGR
FLATN	Re-grid multiple fields into one image incl sensitivity
FLDSIZE	specifies size(s) of images to be processed
FLUX	gives a total intensity value for image/component or to limit
FOV	Specifies the field of view
FSHIFT	specifies a position shift - output from fitting routines
FSIZE	file size in Megabytes
GAIN	specifies loop gain for deconvolutions
GUARD	portion of UV plane to receive no data in gridding
HA2TI	Converts data processed by TI2HA (STUFFER) back to real times
HISEQ	task to translate image by histogram equalization
HLPCLEAN	Cleaning tasks - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
HOCLN	Task to do a clean of holography images
HOLGR	Read & process holography visibility data to telescope images
HOLOG	Read & process holography visibility data to telescope images
IM2CC	Task to convert an image to multi-facet Clean Components
IM2PARM	Specifes enhancement parameters for OOP-based imaging: 2nd set
IM2UV	converts an image to a visibility data set
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
IMAGRPRM	Specifes enhancement parameters for OOP-based imaging
IMERG	merges images of different spatial resolutions
IMSIZE	specifies number of pixels on X and Y axis of an image
IMTXT	Write an image to an external text file.
INLIST	specifies name of input disk file, usually a source list
LINIMAGE	Build image cube from multi-IF data set
LISPX	Fits spectral indexes to a list of spectra, allows interactive edit
LTESS	makes mosaic images by linear combination
MANDL	creates an image of a subset of the Mandlebrot Set

MAPPR	Simplified access to IMAGR
MAPSHIFT	used by MAPPR to specify the shift of the image from the phase center
MASKS	Makes mask image of Clean boxes from boxfile
MAXPIXEL	maximum pixels searched for components in Clark CLEAN
MOD3D	Computes a 3D CC model from a set of facets
MODVF	task to create a warped velocity field
MWFLT	applies linear & non-linear filters to images
NBOXES	Number of boxes
NCCBOX	Number of clean component boxes
NCOMP	Number of CLEAN components
NDIG	Number of digits to display
NFIELD	The number of fields imaged
NMAPS	Number of maps (images) in an operation
NOIFS	makes all IFs into single spectrum
NOISE	estimates the noise in images, noise level cutoff
OBITIMAG	Access to OBIT task Imager without self-cal or peeling
OBITMAP	Simplified access to OBIT task Imager
OBITPEEL	Access to OBIT task Imager with self-cal and peeling
OBITSCAL	Access to OBIT task Imager with self-cal, NOT peeling
OBITVERS	Python version to use with BDF2AIPS and OBIT imaging verbs
OBOXFILE	specifies name of output Clean box text file
ONEBEAM	specifies whether one beam is made for all facets or one for each
ONEFREQ	states that the current CC model was made with one frequency
OOSUB	Subtracts/divides a model from/into a uv data base
OUT2CLAS	The class of a secondary output file
OUT2DISK	The disk number of a secondary output file.
OUT2NAME	The name of a secondary output file.
OUT2SEQ	The sequence of a secondary output file.
OVERLAP	specifies how overlaps are to be handled
OVRSWTCH	specifies when IMAGR switches from OVERLAP ¿= 2 to OVERLAP = 1 mode
PADIM	Task to increase image size by padding with some value
PASTE	Pastes a selected subimage of one image into another.
PATGN	Task to create a user specified test or primary-beam pattern
PBCOR	Task to apply or correct an image for a primary beam
PBPARM	Primary beam parameters
PBSIZE	estimates the primary beam size in interferometer images
PGEOM	Task to transform an image into polar coordinates.
PHASE	Baseline Phase coherence measurement
PHAT	Prussian hat size
PIPEAIPS	calibrating amplitude and phase, and imaging VLA data
PIX2VAL	An image value in the units specified in the header.
PIX2XY	Specifies a pixel in an image
PIXAVG	Average image value
PIXRANGE	Range of pixel values to display
PIXSTD	RMS pixel deviation
PIXVAL	Value of a pixel
PIXXY	Specifies a pixel location.
PPARM	used by PEELR to list the facets to be ”peeled”
PRTCC	prints the contents of a Clean Components extension file.
PUTVALUE	Verb to store a pixel value at specified position
QCREATE	adverb controlling the way large files are created
QUANTIZE	Quantization level to use
REBOX	Verb to reset boxes with TV cursor & graphics display.
REGRD	Regrids an image from one co-ordinate frame to another
REMAG	Task to replace magic blanks with a user specified value
RMSD	Calculate rms for each pixel using data in a box around the pixel
ROBUST	Uniform weighting ”robustness” parameter
RSTOR	Restores a Clean component file to a map with a Gaussian beam.
SABOX	create box file from source islands in facet images

SCIMG	Full-featured imaging plus self-calibration loop with editing
SCMAP	Imaging plus self-calibration loop with editing
SDCLN	deconvolves image by Clark and then "SDI" cleaning methods
SDGRD	Task to select and image random-position single-dish data
SDIMG	Task to select and image random-position single-dish data
SETFC	Makes a BOXFILE for input to IMAGR, recommends cell and image sizes.
SHADW	Generates the "shadowed" representation of an image
SHIFT	specifies a position shift
SIZEFILE	return file size plus estimate of IMAGR work file size
SKEW	Specifies a skew angle
SKYVE	Regrids a DSS image from one co-ordinate frame to another
SMODEL	Source model
SPCOR	Task to correct an image for a primary beam and spectral index
SPECR	Spectral regridding task for UV data
SPFIX	Makes cube from input to and output from SPIXR spectral index
SPIXR	Fits spectral indexes to each row of an image incl curvature
STACK	Task to co-add a set of 2-dimensional images with weighting
STEER	Task which deconvolves the David Steer way.
STESS	Task which finds sensitivity in mosaicing
STFACTOR	scales star display or SDI CLEANing process
STUFFR	averages together data sets in hour angle
SUBIM	Task to select a subimage from up to a 7-dim. image
SUMIM	Task to sum overlapping, sequentially-numbered images
TDEPEND	Time-dependent imaging procedure sequence
TDSCANS	Time-dependent imaging procedure sequence: find intervals
TDSSCAN	Time-dependent imaging procedure sequence: find intervals
TDSTEP3	Time-dependent imaging procedure "step 3"
TDSTEP5	Time-dependent imaging procedure sequence: later steps
TKBOX	Procedure to set a Clean box with the TK cursor
TKNBOXS	Procedure to set Clean boxes 1 - n with the TK cursor
TRANS	Task to transpose a subimage of an up to 7-dim. image
TRANSCOD	Specified desired transposition of an image
TRC	Specified the top right corner of a subimage
TVBOX	Verb to set boxes with TV cursor & graphics display.
TVSPX	Fits spectral indexes to each image row, allows interactive edit
UBAVG	Baseline dependent time averaging of uv data
UNSPX	Removes spectral index model from a data cube
UTESS	deconvolves images by maximizing emptiness
UVBOX	radius of the smoothing box used for uniform weighting
UVBXFN	type of function used when counting for uniform weighting
UVFRE	Makes one data set have the spectral structure of another
UVIMG	Grid UV data into an "image"
UVMAP	makes images from calibrated UV data.
UVPOL	modifies UV data to make complex image and beam
UVSIZE	specifies number of pixels on X and Y axes of a UV image
UVSUB	Subtracts/divides a model from/into a uv data base
UVWTFN	Specify weighting function, Uniform or Natural
VLARUN	Calibrating amplitude and phase, and imaging VLA data
VTESS	Deconvolves sets of images by the Maximum Entropy Method
WGAUSS	Widths of Gaussian models (FWHM)
WTSUM	Task to do a a sum of images weighted by other images
XMOM	Fits one-dimensional moments to each row of an image
YPARM	Specifies Y axis convolving function
ZEROSP	Specify how to include zero spacing fluxes in FT of UV data

13.17 INFORMAT

ASTROMET	Describes the process of astrometric/geodetic reduction in AIPS
BATCHJOB	Information about BATCH
CALIBRAT	describes the process of data calibration in AIPS
CATEGORY	List of allowed primary keywords in HELP files
GNUGPL	Information about GNU General Public License for AIPS
LSAPROPO	Data input to APROPO to find what uses what words
MSGSERVER	Information about the X11-based message server
MSGSRV	Information about the X11-based message server
NEWTASK	Information about installing a new task
NOADVERB	Information about the lack of a defined adverb or verb
PANIC	Instructions for what to do when things go wrong
POPSDAT	lists all POPS symbols to create them for MEmory files
POPSYM	Describes the symbols used in POPS
POSTSCRIP	General comments about AIPS use of PostScript incl macros
READLINE	Information about AIPS use of the GNU readline library.
REBYTE	service program to transform byte order of full data sets
SECONDARY	List of allowed secondary keywords in HELP files
SECONDRY	List of allowed secondary keywords in HELP files
TEKSERVER	Information about the X-11 Tektronix emulation server
TEKSRV	Information about the X-11 Tektronix emulation server
TPMON	Information about the TPMON "Daemon"
USERLIST	Alphabetic and numeric list of VLA users, points to real list
UV1TYPE	Convolving function type 1, pillbox or square wave
UV2TYPE	Convolving function type 2, exponential function
UV3TYPE	Convolving function type 3, sinc function
UV4TYPE	Convolving function type 4, exponent times sinc function
UV5TYPE	Convolving function type 5, spheroidal function
UV6TYPE	Convolving function type 6, exponent times BessJ1(x) / x
WHATSNEW	lists changes and new code in the last several AIPS releases
XAS	Information about TV-Servers

13.18 INTERACT

AIPS	AIPS main program for interactive use
BPEDT	Interactive TV task to edit uv data based on BP tables
DELBOX	Verb to delete boxes with TV cursor & graphics display.
DFILEBOX	Verb to delete Clean boxes with TV cursor & write to file
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
FILEBOX	Verb to reset Clean boxes with TV cursor & write to file
FTFLG	interactive flagging of UV data in channel-time using the TV
HLPAGAUS	Interactive Gaussian absorption fitting task AGAUS - run-time help
HLPCLEAN	Cleaning tasks - run-time help
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFILIT	Interactive Clean box file editing with image display - run-time help
HLPFTFLG	Interactive time-channel visibility Editor - run-time help

HLPIBLED	Interactive Baseline based visibility Editor - run-time help
HLPLISPX	Fits spectral index model to data in text file - run-time help
HLPPCFLG	Interactive time-channel PC table Editor PCFLG - run-time help
HLPPLAYR	OOP TV class demonstration task - run-time help
HLPRMFIT	Polarization fitting task RMFIT - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
HLPSPFLG	Interactive time-channel visibility Editor SPFLG - run-time help
HLPTVFLG	Interactive time-baseline visibility Editor TVFLG - run-time help
HLPTVHLD	Interactive image display with histogram equalization - run-time help
HLPTVHUI	Interactive intensity-hue-saturation display - run-time help
HLPTVIEW	Interactive display of cube in 3 transpositions - run-time help
HLPTVRGB	Interactive red-green-blue display - run-time help
HLPTVSAD	Find & fit Gaussians to an image with interaction - run-time help
HLPTVSPC	Interactive display of spectra from a cube - run-time help
HLPTVSPX	Fits 1-dimensional spectral index model to data - run-time help
HLPUFLAG	Edit uv-data on a grid UFLAG - run-time help
HLPWIPER	edit uv data from UVPLT-like plot WIPER - run-time help
HLPXGAUS	Interactive Gaussian fitting task XGAUS - run-time help
HLPZAMAN	Fits 1-dimensional Zeeman model to absorption data - run-time help
HLPZEMAN	Fits 1-dimensional Zeeman model to data - run-time help
IBLED	Interactive BaseLine based visibility EDitor
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
LISPX	Fits spectral indexes to a list of spectra, allows interactive edit
MAPPR	Simplified access to IMAGR
MFITSET	gets adverbs for running IMFIT and JMFIT
OPTELL	The operation to be passed to a task by TELL
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
PLAYR	Task to load one or two images and play with them on the TV
READ	Read a value from the users terminal
READLINE	Information about AIPS use of the GNU readline library.
REBOX	Verb to reset boxes with TV cursor & graphics display.
SCIMG	Full-featured imaging plus self-calibration loop with editing
SCMAP	Imaging plus self-calibration loop with editing
SETSLICE	Set slice endpoints on the TV interactively
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
SPFLG	interactive flagging of UV data in channel-TB using the TV
TDEPEND	Time-dependent imaging procedure sequence
TDSCANS	Time-dependent imaging procedure sequence: find intervals
TDSSCAN	Time-dependent imaging procedure sequence: find intervals
TDSTEP3	Time-dependent imaging procedure "step 3"
TDSTEP5	Time-dependent imaging procedure sequence: later steps
TK1SET	Verb to reset 1D gaussian fitting initial guess.
TKBOX	Procedure to set a Clean box with the TK cursor
TKNBOXS	Procedure to set Clean boxes 1 - n with the TK cursor
TKPOS	Read a position from the graphics screen or window
TKSET	Verb to set 1D gaussian fitting initial guesses.
TKWIN	Procedure to set BLC and TRC with Graphics cursor
TV1SET	Verb to reset 1D gaussian fitting initial guess on TV plot.
TVBOX	Verb to set boxes with TV cursor & graphics display.
TVFLG	interactive flagging of UV data using the TV
TVHELIX	Verb to activate a helical hue-intensity TV pseudo-coloring
TVIEW	Display image cube in all 3 transpositions with rotation & reference
TVSAD	Finds and fits Gaussians to portions of an image with interaction
TVSCROL	Shift position of image on the TV screen
TVSET	Verb to set slice Gaussian fitting initial guesses from TV plot
TVSPC	Display images and spectra from a cube
TVSPLIT	Compare two TV image planes, showing halves

TVSPX	Fits spectral indexes to each image row, allows interactive edit
TVSTAT	Find the mean and RMS in a blotch region on the TV
TVTRANSF	Interactively alters the TV image plane transfer function
TVWINDOW	Set a window on the TV with the cursor
TVZOOM	Activate the TV zoom
UFLAG	Plots and edits data using a uv-plane grid and the TV
WEDERASE	Load a wedge portion of the TV with zeros
WIPER	plots and edits data from a UV data base using the TV

13.19 MODELING

ACTNOISE	puts estimate of actual image uncertainty and zero in header
AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
BLPCL	Do divide by I,Q,U models for circular polarization BLCHN
BLPOLCAL	Do BLCHN for I, Q, U, V models
BOXES	Adds Clean boxes to BOXFILE around sources.
BSMOD	creates single-dish UV beam-switched data with model sources
BSTST	Graphical display of solutions to frequency-switched data
CHEBI	Make text file to plot Chebyshev polynomials
CMETHOD	specifies the method by which the uv model is computed
CMODEL	specifies the method by which the uv model is computed
CONFI	Optimize array configuration by minimum side lobes
CUBIT	Model a galaxy's density and velocity distribution from full cube
DGAUS	Correct UV model for convolution by Clean beam
DIFUV	Outputs the difference of two matching input uv data sets
DOMODEL	selects display of model function
DORESID	selects display of differences between model and data
DOSPIX	selects solutions for spectral index of model components
EFACTOR	scales some error analysis process
EVAUV	Subtracts & divides a model into UV data, does statistics on results
FACES	makes images of catalog sources for initial calibration
FITOUT	specifies name of output text file for results of fitting
FSHIFT	specifies a position shift - output from fitting routines
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
GLENS	models galaxy gravitational lens acting on 3 component source
HLPAGAUS	Interactive Gaussian absorption fitting task AGAUS - run-time help
HLPLISPX	Fits spectral index model to data in text file - run-time help
HLPRMFIT	Polarization fitting task RMFIT - run-time help
HLPTVSAD	Find & fit Gaussians to an image with interaction - run-time help
HLPTVSPX	Fits 1-dimensional spectral index model to data - run-time help
HLPXGAUS	Interactive Gaussian fitting task XGAUS - run-time help
HLPZAMAN	Fits 1-dimensional Zeeman model to absorption data - run-time help
HLPZEMAN	Fits 1-dimensional Zeeman model to data - run-time help
IMFIT	Fits Gaussians to portions of an image
IMMOD	adds images of model objects to an image
INLIST	specifies name of input disk file, usually a source list
JMFIT	Fits Gaussians to portions of an image
MFITSET	gets adverbs for running IMFIT and JMFIT
MFPRT	prints MF tables in a format needed by modelling software
MOD3D	Computes a 3D CC model from a set of facets
MODAB	Makes simple absorption/emission spectral-line image in I/V
MODIM	adds images of model objects to image cubes in IQU polarization
MODSP	adds images of model objects to image cubes in I/V polarization
MODVF	task to create a warped velocity field
OMFIT	Fits sources and, optionally, a self-cal model to uv data
ONEFREQ	states that the current CC model was made with one frequency
OOSUB	Subtracts/divides a model from/into a uv data base

RADIUS	Specify a radius in an image
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
RMSLIMIT	selects things with RMS above this limit
SAD	Finds and fits Gaussians to portions of an image
SDMOD	modifies single-dish UV data with model sources
SLFIT	Task to fit gaussians to slice data.
SPMOD	Modify UV database by adding a model with spectral lines
SPXMD	adds images of model objects to image cubes in spectral index
STVERS	star display table version number
TK1SET	Verb to reset 1D gaussian fitting initial guess.
TKAMODEL	Verb to add slice model display directly on TEK
TKARESID	Verb to add slice model residuals directly on TEK
TKGUESS	Verb to display slice model guess directly on TEK
TKMODEL	Verb to display slice model directly on TEK
TKRESID	Verb to display slice model residuals directly on TEK
TKSET	Verb to set 1D gaussian fitting initial guesses.
TKSLICE	Verb to display slice file directly on TEK
TV1SET	Verb to reset 1D gaussian fitting initial guess on TV plot.
TVACOMPS	Verb to add slice model components directly on TV graphics
TVAGUESS	Verb to re-plot slice model guess directly on TV graphics
TVAMODEL	Verb to add slice model display directly on TV graphics
TVARESID	Verb to add slice model residuals directly on TV graphics
TVASLICE	Verb to add a slice display on TV graphics from slice file
TVCOMPS	Verb to display slice model components directly on TV graphics
TVGUESS	Verb to display slice model guess directly on TV graphics
TVMODEL	Verb to display slice model directly on TV graphics
TVRESID	Verb to display slice model residuals directly on TV graphics
TVSAD	Finds and fits Gaussians to portions of an image with interaction
TVSET	Verb to set slice Gaussian fitting initial guesses from TV plot
TVSLICE	Verb to display slice file directly on TV
UVFIT	Fits source models to uv data.
UVGIT	Fits source models to uv data.
UVMOD	Modify UV database by adding a model incl spectral index
UVSUB	Subtracts/divides a model from/into a uv data base
VHCAL	Do divide by I,Q,U models for linear polarization data
VHCALIB	Do CALIB for linear polarization with I, Q, U models
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.20 OBSOLETE

ABACKUP	VMS procedure to back up data on tape
ARESTORE	Restores back up tapes of users data
CLIPM	Renamed CLIP to flag excessive amplitudes
CROSSPOL	Procedure to make complex poln. images and beam.
DDT	previous verion of Y2K to test performance and correctness of code
DDTSIZE	String formerly used by the DDT test
HORUS	makes images from unsorted UV data, applying any calibration
MAPDIF	Was used by the DDT test suite
MX	makes images & deconvolves using UV data directly - replaced
OFFROAM	Procedure to clear the TV from a Roam condition

PHCLN	PHCLN has been removed, use PHAT adverb in APCLN.
POLSN	Make a SN table from cross polarized fringe fit
PSEUDO	Description of POPS pseudoverbs - obsolete list file
SETROAM	Verb used to set roam image mode, then do roam. OBSOLETE
SNCUT	Specifies minimum signal-to-noise ratio
TIMDEST	Verb to destroy all files which are too old
VLBACPOL	Procedure to calibrate cross-polarization delays
XVSS	Information about older Sun OpenWindows-specific TV-Server

13.21 ONED

AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
PFPL2	Paraform Task to generate a plot file: (slice intensity)
PLCUB	Task to plot intensity vs x panels on grid of y,z pixels
PLROW	Plot intensity of a series of rows with an offset.
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
SETSLICE	Set slice endpoints on the TV interactively
SL2PL	Task to convert a Slice File to a Plot File
SLFIT	Task to fit gaussians to slice data.
SLICE	Task to make a slice file from an image
SLPRT	Task to print a Slice File
TK1SET	Verb to reset 1D gaussian fitting initial guess.
TKAMODEL	Verb to add slice model display directly on TEK
TKARESID	Verb to add slice model residuals directly on TEK
TKASLICE	Verb to add a slice display on TEK from slice file
TKGUESS	Verb to display slice model guess directly on TEK
TKMODEL	Verb to display slice model directly on TEK
TKRESID	Verb to display slice model residuals directly on TEK
TKSET	Verb to set 1D gaussian fitting initial guesses.
TKSLICE	Verb to display slice file directly on TEK
TV1SET	Verb to reset 1D gaussian fitting initial guess on TV plot.
TVACOMPS	Verb to add slice model components directly on TV graphics
TVAGUESS	Verb to re-plot slice model guess directly on TV graphics
TVAMODEL	Verb to add slice model display directly on TV graphics
TVARESID	Verb to add slice model residuals directly on TV graphics
TVASLICE	Verb to add a slice display on TV graphics from slice file
TVCOMPS	Verb to display slice model components directly on TV graphics
TVGUESS	Verb to display slice model guess directly on TV graphics
TVMODEL	Verb to display slice model directly on TV graphics
TVRESID	Verb to display slice model residuals directly on TV graphics
TVSET	Verb to set slice Gaussian fitting initial guesses from TV plot
TVSLICE	Verb to display slice file directly on TV
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
XPLOT	Plots image rows one at a time on the graphics or TV screen
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.22 OOP

BLING	find residual rate and delay on individual baselines
BPEDT	Interactive TV task to edit uv data based on BP tables
BSCOR	Combines two beam-switched images
BSGEO	Beam-switched Az-El image to RA-Dec image translation
BSGRD	Task to image beam-switched single-dish data
CCEDT	Select CC components in BOXes and above mininum flux.
CCSEL	Select signifigant CC components
DSKEW	Geometric interpolation correction for skew
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
FILIT	Interactive BOXFILE editing with facet images
FINDR	Find normal values for a uv data set
FIXWT	Modify weights to reflect amplitude scatter of data
FLAGR	Edit data based on internal RMS, amplitudes, weights
FLATN	Re-grid multiple fields into one image incl sensitivity
FRCAL	Faraday rotation self calibration task
HLPCLEAN	Cleaning tasks - run-time help
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFILIT	Interactive Clean box file editing with image display - run-time help
HLPPLAYR	OOP TV class demonstration task - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
IM2PARM	Specifes enhancement parameters for OOP-based imaging: 2nd set
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
IMAGRPRM	Specifes enhancement parameters for OOP-based imaging
IMCLP	Clip an image to a specified range.
IMFRING	large image delay fitting with IM2CC and OOFRING
IMSCAL	large image self-cal with IM2CC and OOCAL
MAPBM	Map VLA beam polarization
MBDLY	Fits multiband delays from IF phases, updates SN table
MULIF	Change number of IFs in output
OGEOM	Simple image rotation, scaling, and translation
OHGEO	Geometric interpolation with correction for 3-D effects
OMFIT	Fits sources and, optionally, a self-cal model to uv data
OOCAL	determines antenna complex gain with frequency-dependent models
OOSRT	Sort a UV dataset into a specified order
OOSUB	Subtracts/divides a model from/into a uv data base
PASTE	Pastes a selected subimage of one image into another.
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
PLAYR	Task to load one or two images and play with them on the TV
RFI	Look for RFI in uv data
SABOX	create box file from source islands in facet images
SCIMG	Full-featured imaging plus self-calibration loop with editing
SCMAP	Imaging plus self-calibration loop with editing

SDGRD	Task to select and image random-position single-dish data
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
TDEPEND	Time-dependent imaging procedure sequence
TDSCANS	Time-dependent imaging procedure sequence: find intervals
TDSSCAN	Time-dependent imaging procedure sequence: find intervals
TDSTEP3	Time-dependent imaging procedure "step 3"
TDSTEP5	Time-dependent imaging procedure sequence: later steps
UV2MS	Append single-source file to multi-source file.
VLABP	VLA antenna beam polarization correction for snapshot images

13.23 OPTICAL

COSTAR	Verb to plot a symbol at given position on top of a TV image
GSTAR	Task to read a Guide Star (UK) table and create an ST table.
IMFLT	fits and removes a background intensity plane from an image
STFND	Task to find stars in an image and generate an ST table.
STRAN	Task compares ST tables, find image coordinates (e.g. guide star)
TVSTAR	Verb to plot star positions on top of a TV image
XTRAN	Create an image with transformed coordinates

13.24 PARAFORM

CANDY	user-definable (paraform) task to create an AIPS image
DTCHK	Task to check results of a test using simulated data.
FUDGE	modifies UV data with user's algorithm: paraform task
NEWTASK	Information about installing a new task
OFUDG	modifies UV data with user's algorithm no cal adverbs: paraform task
PFPL1	Paraform Task to generate a plot file: (does grey scale)
PFPL2	Paraform Task to generate a plot file: (slice intensity)
PFPL3	Paraform Task to generate a plot file: (does histogram)
TAFFY	User definable task to operate on an image
TBTSK	Paraform OOP task for tables
UVFIL	Create, fill a uv database from user supplied information

13.25 PLOT

AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
ALIAS	adverb to alias antenna numbers to one another
ALVAR	Plots the Allan Variance statistic of a UV data set
ANBPL	plots and prints uv data converted to antenna based values
ASPMM	Plot scaling parameter - arc seconds per millimeter on plot
AVGCHAN	Controls averaging of spectral channels
AVGIF	Controls averaging of IF channels
BDROP	gives number of pooints dropped at the beginning
BLPLT	Plots BLCAL tables in 2 dimensions as function of baseline and IF
BLSUM	sums images over irregular sub-images, displays spectra
BPEPL	Plots bandpass tables overlaying multiple times like BPEDT
BPERR	Print and plot BPASS closure outputs
BPLOT	Plots bandpass tables in 2 dimensions as function of time
BPPLT	Plots selected contents of bandpass (BP) files versus time
CAPLT	plots closure amplitude and model from CC file
CBPLOT	selects a display of a Clean beam full width at half maximum

CCNTR	Generate a contour plot file from an image with CC or MF plotted
CHEBI	Make text file to plot Chebyshev polynomials
CIRCLEVS	Sets RGBLEVS to fill LEVS with a circular color scheme
CLEV	Contour level multiplier in physical units
CLOSE	plots closure phase or amplitude spectra averaged over closures
CLPLT	plots closure phase and model from CC file
CNTR	generate a contour plot file or TV plot from an image
CODETYPE	specifies the desired operation or data type
CON3COL	Controls use of full 3-color graphics for contouring
CONPL	Plots AIPS gridding convolution functions
COPIES	sets the number of copies to be made
COSTAR	Verb to plot a symbol at given position on top of a TV image
DARKLINE	The level at which vectors are switched from light to dark
DEFCOLOR	Sets adverb PLCOLORS to match s default XAS TV
DELZN	Determines residual atmosphere depth at zenith and clock errors
DFTPL	plots DFT of a UV data set at arbitrary point versus time
DIST	gives a distance
DO3COLOR	Controls whether full 3-color graphics are used in a plot
DOALIGN	specifies how two or more images are aligned in computations
DOBLANK	controls handling of blanking
DOCENTER	selects something related to centering
DOCIRCLE	select a ”circular” display (i.e. trace coordinates, ...)
DOCOLOR	specifies whether coloring is done
DOCONT	selects a display of contour lines
DOCRT	selects printer display or CRT display (giving width)
DODARK	specifies whether ”dark” vectors are plotted dark or light
DODATE	specifies if the dat and time are to be used in some way
DOEBAR	Controls display of estimates of the uncertainty in the data
DOFRACT	Tells whether to compute a fraction or ratio
DOGREY	selects a display of a grey-scale image
DOHIST	selects a histogram display or controls writing of history file
DOHMS	selects sexagesimal (hours-mins-secs) display format
DOMODEL	selects display of model function
DOPLOT	Controls plotting of something
DOPRINT	selects printer display or CRT display (giving width)
DORESID	selects display of differences between model and data
DOSLICE	selects display of slice data
DOVECT	selects display of polarization vectors
DOWEDGE	selects display of intensity step wedge
EDROP	number of points/iterations to be omitted from end of process
ELFIT	Plots/fits selected contents of SN, TY, SY, PC or CL files
ELINT	Determines and removes gain dependence on elevation
EXTAB	exports AIPS table data as tab-separated text
EXTLIST	lists detailed information about contents of extension files
FACTOR	scales some display or CLEANing process
FGPLT	Plots selected contents of FG table
FLAMLEVS	Sets RGBLEVS to fill LEVS with a red flame color scheme
FRPLT	Task to plot fringe rate spectra
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
FUNCTYPE	specifies type of intensity transfer function
GAL	Determine parameters from a velocity field
GCPLT	Plots gain curves from text files
GREYS	plots images as contours over multi-level grey
GSTAR	Task to read a Guide Star (UK) table and create an ST table.
HLPUFLAG	Edit uv-data on a grid UFLAG - run-time help
HLPWIPER	edit uv data from UVPLT-like plot WIPER - run-time help
ICUT	specifies a cutoff level in units of the image
IMEAN	displays the mean & extrema and plots histogram of an image
IMRMS	Plot IMEAN rms answers

IMVIM	plots one image's values against another's
IRING	integrates intensity / flux in rings / ellipses
ISPEC	Plots and prints spectrum of region of a cube
KNTR	make a contour/grey plot file from an image w multiple panels
LABEL	selects a type of extra labeling for a plot
LAYER	Task to create an RGB image from multiple images
LEVS	list of multiples of the basic level to be contoured
LPEN	specifies the "pen width" code # =¿ width of plotted lines
LTYPE	specifies the type and degree of axis labels on plots
LWPLA	translates plot file(s) to a PostScript printer or file
MARSP	Check planetary polarization angles, plot histogram of differences
MF2ST	Task to generate an ST ext. file from Model Fit ext. file
NPLOTS	gives number of plots per page or per job
NX	General adverb referring to a number of things in the X direction
NY	General adverb referring to a number of things in the Y direction
OBPLT	Plot columns of an OB table.
OFMFILE	specifies the name of a text file containing OFM values
OKCOLORS	Sets adverb PLCOLORS to use less ink (white background)
PCFIT	Finds delays and phases using a pulse-cal (PC) table
PCHIS	Generates a histogram plot file from text input, e.g. from PCRMS
PCNTR	Generate plot file with contours plus polarization vectors
PCPLT	Plots pulse-cal tables in 2 dimensions as function of time
PCUT	Cutoff in polarized intensity
PDPLT	Plots selected contents of PD tables
PFPL1	Paraform Task to generate a plot file: (does grey scale)
PFPL2	Paraform Task to generate a plot file: (slice intensity)
PFPL3	Paraform Task to generate a plot file: (does histogram)
PLCOLORS	specifies the colors to be used
PLCUB	Task to plot intensity vs x panels on grid of y,z pixels
PLEV	Percentage of peak to use for contour levels
PLGET	gets the adverbs used to make a particular plot file
PLOTC	Plots color schems used by 3-color plot tasks
PLOTR	Basic task to generate a plot file from text input
PLRFI	Plots spectral statistics from output of VBRFI & VLBRF
PLROW	Plot intensity of a series of rows with an offset.
PLVER	specifies the version number of a PL extension file
POL3COL	Controls use of full 3-color graphics for polarization lines
POLPLOT	specifies the desired polarization ratio before plotting.
POSTSCRIP	General comments about AIPS use of PostScript incl macros
PRINTER	Verb to set or show the printer(s) used
PROFL	Generates plot file for a profile display.
PRTAB	prints any table-format extension file
PRTAN	prints the contents of the ANtenna extension file
PRTIM	prints image intensities from an MA catalog entry
PVPLOT	selects a display of a polarization vector in a box in a corner
RAINLEVS	Sets RGBLEVS to fill LEVS with a rainbow color scheme
RGBLEVS	colors to be applied to the contour levels
RIRMS	computes rms of real/imag of a selected subset of a uv data set
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
RSPEC	Plots and prints spectrum of rms of a cube
SCLIM	operates on an image with a choice of mathematical functions
SL2PL	Task to convert a Slice File to a Plot File
SLPRT	Task to print a Slice File
SNBLP	Plots selected contents of SN or CL files on a baseline basis
SNFIT	Fits parabola to SN amplitudes and plots result
SNIFS	Plots selected contents of SN, TY, SY, PC or CL files by IF
SNPLT	Plots selected contents of SN, SY, TY, PC or CL files versus time
SOUSP	fits source spectral index from SU table or adverbs
SPRMS	Plots spectral statistics of a selected subset of a uv data set

STARS	Task to generate an ST ext. file with star positions
STEPLEVS	Sets RGBLEVS to fill LEVS with a repeated sequence of colors
STFND	Task to find stars in an image and generate an ST table.
STVERS	star display table version number
SYMBOL	General adverb, probably defines a plotting symbol type
SYVSN	Plots selected SY/TY data with SN solution values versus time
TADIF	prints differences between two table-format extension files
TAPLT	Plots data from a Table extension file
TARPL	Plot input and output text files of the TARS task
TEKSERVER	Information about the X-11 Tektronix emulation server
TEKSRV	Information about the X-11 Tektronix emulation server
TEPLT	Plots selected contents of TE (TECOR) parameter tables
TKAMODEL	Verb to add slice model display directly on TEK
TKARESID	Verb to add slice model residuals directly on TEK
TKASLICE	Verb to add a slice display on TEK from slice file
TKBOX	Procedure to set a Clean box with the TK cursor
TKERASE	Erase the graphics screen or window
TKGUESS	Verb to display slice model guess directly on TEK
TKMODEL	Verb to display slice model directly on TEK
TKNBOXS	Procedure to set Clean boxes 1 - n with the TK cursor
TKPL	Task to send a plot file to the TEK
TKPOS	Read a position from the graphics screen or window
TKRESID	Verb to display slice model residuals directly on TEK
TKSLICE	Verb to display slice file directly on TEK
TKWIN	Procedure to set BLC and TRC with Graphics cursor
TVACOMPS	Verb to add slice model components directly on TV graphics
TVAGUESS	Verb to re-plot slice model guess directly on TV graphics
TVAMODEL	Verb to add slice model display directly on TV graphics
TVARESID	Verb to add slice model residuals directly on TV graphics
TVASLICE	Verb to add a slice display on TV graphics from slice file
TVCOLORS	Sets adverb PLCOLORS to match the TV (DOTV=1) usage
TVCOMPS	Verb to display slice model components directly on TV graphics
TVGUESS	Verb to display slice model guess directly on TV graphics
TVMODEL	Verb to display slice model directly on TV graphics
TVPL	Display a plot file on the TV
TVRESID	Verb to display slice model residuals directly on TV graphics
TVSLICE	Verb to display slice file directly on TV
TVSTAR	Verb to plot star positions on top of a TV image
TXPL	Displays a plot (PL) file on a terminal or line printer
UFLAG	Plots and edits data using a uv-plane grid and the TV
UVHGM	Plots statistics of uv data files as histogram.
UVHOL	Prints holography data from a UV data base with calibration
UVPLT	Plots data from a UV data base in multiple ways
UVPRM	measures parameters from a UV data base
UVRMS	computes statistics of a selected subset of a uv data set
VBRFI	Plots spectral statistics of VLBA autocorrelation data for RFI
VLBACRPL	Plots crosscorrelations
VLBASNPL	Plots selected contents of SN or CL files
VLBRF	Plots spectral statistics of VLBA autocorrelation data for RFI
VPLOT	Plots uv data and model from CC file
WETHR	Plots selected contents of WX tables, flags data based on WX
WIPER	plots and edits data from a UV data base using the TV
XAXIS	Which parameter is plotted on the horizontal axis.
XBASL	Fits and subtracts nth-order baselines from cube (x axis)
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
XPLOT	Plots image rows one at a time on the graphics or TV screen
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.26 POLARIZA

AFARS	Is used after FARS to determine Position and Value of the maximum
ALBUS	Calculate ionospheric delay and Faraday rotation using ALBUS
AVERSION	Specify a version of the ALBUS container
BANDPOL	specifies polarizations of individual IFs
BDEPO	computes depolarization due to rotation measure gradients
BLPCL	Do divide by I,Q,U models for circular polarization BLCHN
BLPOLCAL	Do BLCHN for I, Q, U, V models
COMB	combines two images by a variety of mathematical methods
CXPOLN	Procedure to make complex polarization images and beam
DOFARS	Procedure to aid in Faraday rotation synthesis using the FARS task
DOPOL	selects application of any polarization calibration
DT2PD	Write PD table from a PD table text file
FARAD	add ionospheric Faraday rotation to CL table
FARS	Faraday rotation synthesis based on the brightness vs wavelength
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
HLPRMFIT	Polarization fitting task RMFIT - run-time help
HLPZAMAN	Fits 1-dimensional Zeeman model to absorption data - run-time help
HLPZEMAN	Fits 1-dimensional Zeeman model to data - run-time help
LPCAL	Determines instrumental polarization for UV data
MAPBM	Map VLA beam polarization
MARSP	Check planetary polarization angles, plot histogram of differences
MEDI	combines four images by a variety of mathematical methods
MFIMG	Image the Earth magnetic field model or TEC data used by TECOR
MODAB	Makes simple absorption/emission spectral-line image in I/V
MODIM	adds images of model objects to image cubes in IQU polarization
MODSP	adds images of model objects to image cubes in I/V polarization
MTARS	Compute model inputs to TARS
PCAL	Determines instrumental polarization for UV data
PCNTR	Generate plot file with contours plus polarization vectors
PCUT	Cutoff in polarized intensity
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
PDPLT	Plots selected contents of PD tables
PDVER	specifies the version of the spetral polarization table to use
PMODEL	Polarization model parameters
POLANGLE	Intrinsic polarization angles for up to 30 sources
POLCO	Task to correct polarization maps for Ricean bias
POLPLOT	specifies the desired polarization ratio before plotting.
PPAPP	Applies Right minus Left phase difference to a 2nd data set
PROGRAM	Specify a program to be used
QUFIX	determines Right minus Left phase difference, corrects cal files
QUOUT	writes text file of Q, U versus frequency to be used by RLDIF
QUXTR	extracts text files from Q,U cubes for input to TARS
RFARS	Correct Q/U cubes for Faraday rotation synthesis results
RIFRM	Task to modify a CL and TE table with IFRM values from ALBUS files
RLCAL	Determines instrumental right-left phase versus time (a self-cal)
RLCOR	corrects a data set for R-L phase differences
RLDIF	determines Right minus Left phase difference, corrects cal files
RM	Task to calculate rotation measure and magnetic field
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
ROTMEAS	Tells the rotation measure of a source
SWPOL	Swap polarizations in a UV data base
TARPL	Plot input and output text files of the TARS task
TARS	Simulation of Faraday rotation synthesis (mainly task FARS)

TRUEP	determines true antenna polarization from special data sets
VH2RL	Converts from linear to circular polarization and vice versa
VHCAL	Do divide by I,Q,U models for linear polarization data
VHCALIB	Do CALIB for linear polarization with I, Q, U models
VHDIF	find/apply V minus H linear polarization phase difference
VLABP	VLA antenna beam polarization correction for snapshot images
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XYDIF	find/apply X minus Y linear polarization phase difference
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.27 POPS

ABOUT	displays lists and information on tasks, verbs, adverbs
ABS	returns absolute value of argument
ACOS	Returns arc cosine of argument (half-circle)
APROPOS	displays all help 1-line summaries containing specified words
ARRAY	Declares POPS symbol name and dimensions
ARRAY1	General scratch array adverb
ARRAY2	General scratch array adverb
ARRAY3	General scratch array adverb
ASIN	Returns arc sine of argument (half-circle)
ATAN	Returns arc tangent of argument (half-circle)
ATAN2	Returns arc tangent of two arguments (full circle)
BB	spare adverb for use in procedures
BY	gives increment to use in FOR loops in POPS language
CATNO	Specifies AIPS catalog slot number range
CEIL	returns smallest integer greater than or equal the argument
CHAR	converts number to character string
CLRTEMP	clears the temporary literal area during a procedure
COMPRESS	recovers unused POPS address space and new symbols
CORE	displays the used and total space used by parts of POPS table
COS	returns cosine of the argument in degrees
DEBUG	turns on/off the POPS-language's debug messages
DEFAULT	Verb-like sets adverbs for a task or verb to initial values
DELAY	Verb to pause AIPS for DETIME seconds
DELTAX	Increment or size in X direction
DELTAY	Increment or size in Y direction
DENUMB	a scalar decimal number
DOOSRO	calibrating amplitude and phase, and imaging VLA data
DOVLAMP	Produces amp calibration file for phased-VLA VLBI data
DOWNCASE	Convert a string to all lower case letters
DPARM	General numeric array adverb used many places
DUMP	displays portions of the POPS symbol table in all formats
EDIT	enter edit-a-procedure mode in the POPS language
EHEX	converts decimal to extended hex
EHNUMB	an extended hexadecimal "number"
ELSE	starts POPS code done if an IF condition is false (IF-THEN..)
END	marks end of block (FOR, WHILE, IF) of POPS code
ENDEDIT	terminates procedure edit mode of POPS input
ERASE	removes one or more lines from a POPS procedure
ERROR	was there an error
EVLA	puts the list of eVLA antennas in the current file on stack
EXIT	ends an AIPS batch or interactive session
EXP	returns the exponential of the argument
EXPLAIN	displays help + extended information describing a task/symbol
FINISH	terminates the entry and compilation of a procedure

`FLOOR`	returns largest integer ¡= argument
`FOR`	starts an iterative sequence of operations in POPS language
`GET`	restores previously SAVEd full POPS environment
`GETDATE`	Convert the current date and time to a string
`GETPOPSN`	Verb to return the pops number on the stack
`GG`	spare scalar adverb for use in procedures
`GRANDOM`	Finds a random number with mean 0 and rms 1
`HELP`	displays information on tasks, verbs, adverbs
`HSA`	puts the list of HSA antennas in the current file on stack
`I`	spare scalar adverb for use in procedures
`IF`	causes conditional execution of a set of POPS statements
`INP`	displays adverb values for task, verb, or proc - quick form
`INPUTS`	displays adverb values for task, verb, or proc - to msg file
`ISBATCH`	declares current AIPS to be, or not to be, batch-like
`J`	spare scalar adverb for use in procedures
`KK`	Spare adverb for use in procedures
`KLEENEX`	ends an AIPS interactive session wiping the slate klean
`LENGTH`	returns length of string to last non-blank character
`LIST`	displays the source code text for a POPS procedure
`LN`	returns the natural logarithm of the argument
`LOG`	returns the base-10 logarithm of the argument
`MAX`	returns the maximum of its two arguments
`MIN`	returns the minimum of its two arguments
`MOD`	returns remainder after division of 1st argument by 2nd
`MODIFY`	modifies the text of a line of a procedure and recompiles
`MODULUS`	returns square root of sum of squares of its two arguments
`NOADVERB`	Information about the lack of a defined adverb or verb
`NUMTELL`	selects POPS number of task which is the target of a TELL or ABORT
`NX`	General adverb referring to a number of things in the X direction
`NY`	General adverb referring to a number of things in the Y direction
`OUTPUTS`	displays adverb values returned from task, verb, or proc
`PARALLEL`	Verb to set or show degree of parallelism
`PASSWORD`	Verb to change the current password for the login user
`PCAT`	Verb to list entries in the user's catalog (no log file).
`PIPEAIPS`	calibrating amplitude and phase, and imaging VLA data
`POPSDAT`	lists all POPS symbols to create them for MEmory files
`POPSYM`	Describes the symbols used in POPS
`PRINT`	Print the value of an expression
`PRINTER`	Verb to set or show the printer(s) used
`PROC`	Define a POPS procedure using procedure editor.
`PROCEDUR`	Define a POPS procedure using procedure editor
`PSEUDOVB`	Declares a name to be a symbol of type pseudoverb
`QINP`	displays adverb values for task, verb, or proc - restart form
`RANDOM`	Compute a random number from 0 to 1
`READ`	Read a value from the users terminal
`REHEX`	converts extended hex string to decimal
`RENAME`	Rename a file (UV or Image)
`RESTART`	Verb to trim the message log file and restart AIPS
`RESTORE`	Read POPS memory file from a common area.
`RETURN`	Exit a procedure allowing a higher level proc to continue.
`RUN`	Pseudoverb to read an external RUN files into AIPS.
`SAVDEST`	Verb to destroy all save files of a user.
`SAVE`	Pseudoverb to save full POPS environment in named file
`SCALAR`	Declares a variable to be a scalar in a procedure
`SCANLENG`	specify length of "scan"
`SCRATCH`	delete a procedure from the symbol table.
`SETDEBUG`	Verb to set the debug print and execution level

SG2RUN	Verb copies the K area to a text file suitable for RUN
SGDESTR	Verb-like to destroy named POPS environment save file
SGINDEX	Verb lists SAVE areas by name and time of last SAVE.
SGUGET	Gets another user's SAVE/GET file.
SGUINDEX	Verb lists SAVE areas by name and time of last SAVE another user
SIN	Compute the sine of a value
SLOT	Specifies AIPS catalog slot number
SPY	Verb to determine the execution status of all AIPS tasks
SQRT	Square root function
STORE	Store current POPS environment
STQUEUE	Verb to list pending TELL operations
STRING	Declare a symbol to be a string variable in POPS
SUBMIT	Verb which submits a batch work file to the job queue
SUBSTR	Function verb to specify a portion of a STRING variable
T1VERB	Temporary verb for testing (also T2VERB...T9VERB)
TAN	Tangent function
TAPES	Verb to show the TAPES(s) available
TASK	Name of a task
TGET	Verb-like gets adverbs from last GO of a task
TGINDEX	Verb lists those tasks for which TGET will work.
TGUINDEX	Verb lists those tasks for which TUGET will work another user
THEDATE	contains the date and time in a string form
THEN	Specified the action if an IF test is true
TO	Specifies upper limit of a FOR loop
TPUT	Verb-like puts adverbs from a task in file for TGETs
TT	spare scalar adverb for use in procedures
TUGET	Verb-like gets adverbs from last GO of a task from another user #
TYPE	Type the value of an expression
UPCASE	Convert a string to all upper case letters
USAVE	Pseudoverb to save full POPS environment in named file
VALUE	Convert a string to a numeric value
VERB	Declares a name to be a symbol of type verb
VERSION	Specify AIPS version or local task area
VGET	Verb-like gets adverbs from version task parameter save area
VGINDEX	Verb lists those tasks for which VGET will work.
VLA	puts the list of VLA antennas in the current file on stack
VLARUN	Calibrating amplitude and phase, and imaging VLA data
VLBA	puts the list of VLBA antennas in the current file on stack
VLBAMPHC	applies VLBARUN calibration to additional phase stopping centers
VLBARUN	applies amplitude and phase calibration procs to VLBA data
VNUMBER	Specifies the task parameter (VGET/VPUT) save area
VPUT	Verb-like puts adverbs from a task in files for VGETs
WAITTASK	halt AIPS until specified task is finished
WHILE	Start a conditional statement
X	spare scalar adverb for use in procedures
XHELP	Accesses hypertext help system
Y	spare scalar adverb for use in procedures

13.28 PROCEDUR

ANTNUM	Returns number of a named antenna
BASFIT	fits antenna locations from SN-table data
BLPOLCAL	Do BLCHN for I, Q, U, V models
BOX2CC	Converts CLBOX in pixels to CCBOX in arc seconds
BREAK	procedure to TELL FILLM to break all current uv files, start new
CALMODEL	Applies SPLIT & UVSUB to make a model data set matching a calibrator
CIRCLEVS	Sets RGBLEVS to fill LEVS with a circular color scheme
COTVLOD	Proc to load an image into a TV channel about a coordinate
CRSFRING	Procedure to calibrate cross pol. delay and phase offsets
CXIMAGR	Grid UV data into a complex image, Fourier transform, Clean
CXPOLN	Procedure to make complex polarization images and beam
DEFCOLOR	Sets adverb PLCOLORS to match s default XAS TV
DOFARS	Procedure to aid in Faraday rotation synthesis using the FARS task
FEW	procedure to TELL FILLM to append incoming data to existing uv files
FITDISK	writes images / uv data w extensions to disk in FITS format
FLAMLEVS	Sets RGBLEVS to fill LEVS with a red flame color scheme
FXALIAS	least squares fit aliasing function and remove
FXAVG	Procedure to enable VLBA delay de-correlation corrections
GRANDOM	Finds a random number with mean 0 and rms 1
IMFRING	large image delay fitting with IM2CC and OOFRING
IMSCAL	large image self-cal with IM2CC and OOCAL
LINIMAGE	Build image cube from multi-IF data set
MANY	procedure to TELL FILLM to start new uv files on each scan
MAPPR	Simplified access to IMAGR
MAXTAB	Returns maximum version number of named table
MERGECAL	Procedure to merge calibration records after concatenation
OFFHUINT	Proc which restores TV functions to normal after TVHUEINT
OKCOLORS	Sets adverb PLCOLORS to use less ink (white background)
OOCAL	determines antenna complex gain with frequency-dependent models
OOFRING	Fringe fit data to determine calibration with spectral index options
PEELR	calibrates interfering sources in multi-facet imges
QUIT	procedure to TELL FILLM to stop at the end of the current scan
RAINLEVS	Sets RGBLEVS to fill LEVS with a rainbow color scheme
READISK	Reads images / uv data w extensions in FITS format into AIPS
RUNWAIT	Runs a task and waits for it to finish
SCANTIME	Returns time range for a given scan number
SETXWIN	Procedure to set BLC and TRC with TV cursor
STEPLEVS	Sets RGBLEVS to fill LEVS with a repeated sequence of colors
STOP	procedure to TELL FILLM to break all current uv files and stop
STUFFR	averages together data sets in hour angle
TDEPEND	Time-dependent imaging procedure sequence
TDSCANS	Time-dependent imaging procedure sequence: find intervals
TDSSCAN	Time-dependent imaging procedure sequence: find intervals
TDSTEP3	Time-dependent imaging procedure ”step 3”
TDSTEP5	Time-dependent imaging procedure sequence: later steps
TELFLM	procedure to TELL real-time FILLM a new APARM(1) value
TKBOX	Procedure to set a Clean box with the TK cursor
TKNBOXS	Procedure to set Clean boxes 1 - n with the TK cursor
TKWIN	Procedure to set BLC and TRC with Graphics cursor
TVALL	Procedure loads image to TV, shows labeled wedge, enhances
TVCOLORS	Sets adverb PLCOLORS to match the TV (DOTV=1) usage
TVDIST	determines spherical distance between two pixels on TV screen
TVFLUX	displays coordinates and values selected with the TV cursor

TVMAXFIT	displays fit pixel positions and intensity at maxima on TV
TVRESET	Reset the TV without erasing the image planes
VHCALIB	Do CALIB for linear polarization with I, Q, U models
VLACALIB	Runs CALIB and LISTR for VLA observation
VLACLCAL	Runs CLCAL and prints the results with LISTR
VLALIST	Runs LISTR for VLA observation
VLARESET	Reset calibration tables to a virginal state
VLASUMM	Plots selected contents of SN or CL files
VLATECR	Calculate ionospheric delay and Faraday rotation corrections
VLBAAMP	applies a-priori amplitude corrections to VLBA data
VLBABPSS	computes spectral bandpass correction table
VLBACALA	applies a-priori amplitude corrections to VLBA data
VLBACCOR	applies a-priori amplitude corrections to VLBA data
VLBACRPL	Plots crosscorrelations
VLBAEOPS	Corrects Earth orientation parameters
VLBAFIX	Procedure that fixes VLBA data, if necessary
VLBAFPOL	Checks and corrects polarization labels for VLBA data
VLBAFQS	Copies different FQIDS to separate files
VLBAFRGP	Fringe fit phase referenced data and apply calibration
VLBAFRNG	Fringe fit data and apply calibration
VLBAKRGP	Fringe fit phase referenced data and apply calibration
VLBAKRNG	Fringe fit data and apply calibration
VLBALOAD	Loads VLBA data
VLBAMCAL	Merges redundant calibration data
VLBAMPCL	Calculates and applies manual instrumental phase calibration
VLBAPANG	Corrects for parallactic angle
VLBAPCOR	Calculates and applies instrumental phase calibration
VLBASNPL	Plots selected contents of SN or CL files
VLBASRT	Sorts VLBA data, if necessary
VLBASUBS	looks for subarrays in VLBA data
VLBASUMM	Prints a summary of a VLBI experiment
VLBATECR	Calculate ionospheric delay and Faraday rotation corrections
WRTDISK	writes images / uv data w extensions to disk in FITS format

13.29 PSEUDOVE

```
Type:  General type of POPS symbol
Use:   Pseudo-verbs are magic symbols which cause FORTRAN routines to
       carry out specific actions.  Unlike verbs, pseudo-verbs are
       executed as soon as they are encountered by the compiler even
       in compile mode.  In general, the FORTRAN routines which are
       invoked will parse the remainder of the input line under
       special, non-standard rules.  Any normal code typed on the line
       ahead of the pseudo-verb will not be executed.
Grammar:  See the HELP listings for the specific pseudoverb.
Examples:    HELP  HELP
             ARRAY   JUNK(4, -7 TO 9)
             PROC DUMMY (I,J)
             LIST DUMMY
             DEBUG TRUE
             INPUTS MLOAD
****************************************************************
```

ABORTASK	stops a running task
ARRAY	Declares POPS symbol name and dimensions
COMPRESS	recovers unused POPS address space and new symbols
CORE	displays the used and total space used by parts of POPS table
DEBUG	turns on/off the POPS-language's debug messages
EDIT	enter edit-a-procedure mode in the POPS language
ELSE	starts POPS code done if an IF condition is false (IF-THEN..)
ENDBATCH	terminates input to batch work file
ENDEDIT	terminates procedure edit mode of POPS input
ERASE	removes one or more lines from a POPS procedure
FINISH	terminates the entry and compilation of a procedure
GET	restores previously SAVEd full POPS environment
IF	causes conditional execution of a set of POPS statements
ISBATCH	declares current AIPS to be, or not to be, batch-like
LIST	displays the source code text for a POPS procedure
MODIFY	modifies the text of a line of a procedure and recompiles
MSGKILL	turns on/off the recording of messages in the message file
TELL	Send parameters to tasks that know to read them on the fly
WHILE	Start a conditional statement

13.30 RUN

ANCHECK	Checks By sign in Antenna files
CHREFANT	Name of reference antenna
DOOSRO	calibrating amplitude and phase, and imaging VLA data
DOVLAMP	Produces amp calibration file for phased-VLA VLBI data
ELEVLIM	Lower limit on elevation
EOPSFILE	Name of text file containing EOP information
OBITVERS	Python version to use with BDF2AIPS and OBIT imaging verbs
PIPEAIPS	calibrating amplitude and phase, and imaging VLA data
SELFCAL	Requests self-calibration of calibration sources
SMRATES	Requests smoothing and clipping of rates after FRING in pipeline
TECRFILE	Name of file containg TEC data for use in TECOR
TECRTYPE	Type of IONEX file to download in VLA and VLBA TECR procedures
TYSMOLEV	Clip level to use in running TYSMO on a VLB TY table
VLAPROCS	Procedures to simplify the reduction of VLBA data
VLARUN	Calibrating amplitude and phase, and imaging VLA data
VLBAARCH	Procedure to archive VLBA correlator data
VLBAMPHC	applies VLBARUN calibration to additional phase stopping centers
VLBARFI	Calibrates VLBA autocorrelations, writes out statistics
VLBARUN	applies amplitude and phase calibration procs to VLBA data
VLBAUTIL	Procedures to simplify the reduction of VLBA data
VLBAWIDE	Calibrates all VLA wide-band autocorrelations with VLBARFI
VLBDDT	Verification tests using simulated data
WRTPROCS	Procedures to simplify the reduction of VLBA data
Y2K	verifies correctness and performance using standard problems
Y2KSAVE	verifies correctness and performance using standard problems

13.31 SINGLEDI

BSAVG	Task to do an FFT-weighted sum of beam-switched images
BSCLN	Hogbom Clean on beam-switched difference image
BSCOR	Combines two beam-switched images
BSFIX	Corrects the ra/dec offsets recorded by the 12m
BSGRD	Task to image beam-switched single-dish data
BSMOD	creates single-dish UV beam-switched data with model sources
BSROT	modifies SD beam-switch continuum data for error in throw
BSTST	Graphical display of solutions to frequency-switched data
CSCOR	applies specified corrections to CS tables
DATA2IN	specifies name of input FITS disk file
DATAIN	specifies name of input FITS disk file
DIFUV	Outputs the difference of two matching input uv data sets
INDXH	writes index file describing contents of UV data base
INDXR	writes index file describing contents of UV data base
OTFBS	Translates on-the-fly continuum SDD format to AIPS UV file
OTFIN	Lists on-the-fly single-dish SDD format data files
OTFUV	Translates on-the-fly single-dish SDD format to AIPS UV file
PRTSD	prints contents of AIPS single-dish data sets
SDCAL	Task to apply single dish calibration
SDGRD	Task to select and image random-position single-dish data
SDIMG	Task to select and image random-position single-dish data
SDLSF	least squares fit to channels and subtracts from SD uv data
SDMOD	modifies single-dish UV data with model sources
SDTUV	Task to convert SD table files to UV like data.
SDVEL	shifts spectral-line single-dish data to a given velocity
VTEST	Measures velocity discrepancy across fields
WTSUM	Task to do a a sum of images weighted by other images

13.32 SPECTRAL

```
Almost all parts of AIPS are general enough to handle mutiple
dimensions of data including multiple frequency channels in the
uv domain and 3 or more dimensional "cubes" in the image domain.
```

ACFIT	Determine antenna gains from autocorrelations
AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
ALTDEF	Sets frequency vs velocity relationship into image header
ALTSWTCH	Switches between frequency and velocity in image header
AVSPC	Averages uv-data in the frequency domain
BASRM	Task to remove a spectral baseline from total power spectra
BCHAN	sets the beginning channel number
BDAPL	Applies a BD table to another data set
BLOAT	converts line data to greater number channels
BLPLT	Plots BLCAL tables in 2 dimensions as function of baseline and IF
BLSUM	sums images over irregular sub-images, displays spectra
BPASS	computes spectral bandpass correction table
BPASSPRM	Control adverb array for bandpass calibration
BPEPL	Plots bandpass tables overlaying multiple times like BPEDT
BPERR	Print and plot BPASS closure outputs
BPLOT	Plots bandpass tables in 2 dimensions as function of time
BPSMO	Smooths or interpolates bandpass tables to regular times
BPVER	specifies the version of the bandpass table to be applied
CHANNEL	sets the spectral channel number
CHANSEL	Array of start, stop, increment channel numbers to average

CHINC	the increment between selected channels
CPASS	computes polynomial spectral bandpass correction table
CUBIT	Model a galaxy's density and velocity distribution from full cube
CVEL	shifts spectral-line UV data to a given velocity
DCHANSEL	Array of start, stop, increment channel #S + IF to avoid
DOAPPLY	Flag to indicate whether an operation is applied to the data
ECHAN	define an end for a range of channel numbers
FIXAL	least squares fit aliasing function and remove
FLGIT	flags data based on the rms of the spectrum
FQUBE	collects n-dimensional images into n+1-dimensional FREQID image
FRMAP	Task to build a map using fringe rate spectra
FRPLT	Task to plot fringe rate spectra
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
FTFLG	interactive flagging of UV data in channel-time using the TV
FXALIAS	least squares fit aliasing function and remove
HLPFTFLG	Interactive time-channel visibility Editor - run-time help
HLPLISPX	Fits spectral index model to data in text file - run-time help
HLPPCFLG	Interactive time-channel PC table Editor PCFLG - run-time help
HLPSPFLG	Interactive time-channel visibility Editor SPFLG - run-time help
HLPTVHUI	Interactive intensity-hue-saturation display - run-time help
HLPTVRGB	Interactive red-green-blue display - run-time help
HLPTVSPX	Fits 1-dimensional spectral index model to data - run-time help
HLPZAMAN	Fits 1-dimensional Zeeman model to absorption data - run-time help
HLPZEMAN	Fits 1-dimensional Zeeman model to data - run-time help
ICHANSEL	Array of start, stop, increment channel #S + IF to average
IMLIN	Fits and removes continuum emission from cube
IRING	integrates intensity / flux in rings / ellipses
ISPEC	Plots and prints spectrum of region of a cube
MCUBE	collects n-dimensional images into n+1-dimensional image
MODAB	Makes simple absorption/emission spectral-line image in I/V
MORIF	Combines IFs or breaks spectral windows into multiple windows (IFs)
NCHAV	Number of channels averaged in an operation
ORDER	Adverb used usually to specify the order of polynomial fit
PCASS	Finds amplitude bandpass shape from pulse-cal table data
PCFIT	Finds delays and phases using a pulse-cal (PC) table
PCPLT	Plots pulse-cal tables in 2 dimensions as function of time
PCVEL	shifts spectral-line UV data to a given velocity: planet version
PDVER	specifies the version of the spetral polarization table to use
PLCUB	Task to plot intensity vs x panels on grid of y,z pixels
PLRFI	Plots spectral statistics from output of VBRFI & VLBRF
POLANGLE	Intrinsic polarization angles for up to 30 sources
POSSM	Task to plot total and cross-power spectra.
PRRFI	Prints excess spectral statistics from output of VBRFI & VLBRF
QUFIX	determines Right minus Left phase difference, corrects cal files
REFREQ	Specifies the frequency to be uased as the reference
REIFS	Breaks spectral windows into multiple spectral windows (IFs)
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
RSPEC	Plots and prints spectrum of rms of a cube
SDLSF	least squares fit to channels and subtracts from SD uv data
SDVEL	shifts spectral-line single-dish data to a given velocity
SERCH	Finds line signals in transposed data cube
SMOTH	Task to smooth a subimage from upto a 7-dim. image
SPECFLUX	Specifies the flux at the reference frequency
SPECINDX	Spectral index used to correct calibrations
SPECPARM	Spectral index per polarization per source
SPECR	Spectral regridding task for UV data
SPECTRAL	Flag to indicate whether an operation is spectral or continuum
SPECURVE	Spectral index survature used to correct calibrations

SPFLG	interactive flagging of UV data in channel-TB using the TV
SPMOD	Modify UV database by adding a model with spectral lines
SPRMS	Plots spectral statistics of a selected subset of a uv data set
SQASH	Task to collapse several planes in a cube into one plane or row
SYSVEL	Systemic velocity
UJOIN	modifies UV data converting IFs to spectral channels
UV2TB	Converts UV autocorrelation spectra to tables
UVBAS	averages several channels and subtracts from uv data.
UVDEC	Decrements the number of spectral channels, keeping every nth
UVFRE	Makes one data set have the spectral structure of another
UVGLU	Glues UV data frequency blocks back together
UVLIN	Fits and removes continuum visibility spectrum, also can flag
UVLSD	least squares fit to channels and divides the uv data.
UVLSF	least squares fit to channels and subtracts from uv data.
UVMLN	edits data based on the rms of the spectrum
UVMOD	Modify UV database by adding a model incl spectral index
VBGLU	Glues together data from multiple passes thru the VLBA corr.
VBRFI	Plots spectral statistics of VLBA autocorrelation data for RFI
VLBABPSS	computes spectral bandpass correction table
VLBRF	Plots spectral statistics of VLBA autocorrelation data for RFI
VTEST	Measures velocity discrepancy across fields
WTSUM	Task to do a a sum of images weighted by other images
XBASL	Fits and subtracts nth-order baselines from cube (x axis)
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
XPLOT	Plots image rows one at a time on the graphics or TV screen
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.33 TABLE

BSPRT	print BS tables
CLCOP	copy CL/SN file calibration between polarizations or IFs
CLINV	copy CL/SN file inverting the calibration
DOTABLE	selects use of table-format for data
EXTAB	exports AIPS table data as tab-separated text
HF2SV	convert HF tables from FRING/MBDLY to form used by Calc/Solve
HFPRT	write HF tables from CL2HF
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
MFPRT	prints MF tables in a format needed by modelling software
OBEDT	Task to flag data of orbiting antennas
OBTAB	Recalculate orbit parameters and other spacecraft info
OFLAG	uses on-line flag table information to write a flag table
PRTAB	prints any table-format extension file
PRTOF	prints on-line flag table information

SNCOP	Task to copy SN table averaging some input IFs
TABED	Task to edit tables
TACOP	task to copy tables, other extension files
TADIF	prints differences between two table-format extension files
TAFLG	Flags data in a Table extension file
TAMRG	Task to merge table rows under specified conditions
TAPLT	Plots data from a Table extension file
TAPPE	Task to append 2 tables and merge to output table
TASAV	Task to copy all extension tables to a dummy uv or map file
TASRT	Task to sort extension tables.
TBDIF	Compare entries in two tables
TBIN	Reads a text file AIPS table into AIPS
TBOUT	Writes an AIPS table into a text file for user editting.
TYCOP	copy TY or SY table calibration between IFs
VLBAMCAL	Merges redundant calibration data

13.34 TAPE

ATLOD	Reads ATCA data in RPFITS format into AIPS
AVEOT	Advances tape to end-of-information point
AVFILE	Moves tape forward or back to end-of-file marks
AVMAP	Advance tape by one image (IBM-CV = obsolete tape file)
AVTP	Positions tape to desired file
BAKLD	reads all files of a catalog entry from BAKTP tape
BAKTP	writes all files of a catalog entry to tape in host format
BLOCKING	specifies blocking factor to use on e.g. tape records
DENSITY	gives the desired tape density
DISMOUNT	disables a magnetic tape and dismounts it from the tape drive
DOEOF	selects end-of-file writing or reading until
DOEOT	selects tape positioning before operation: present or EOI
DONEWTAB	do we make new tables, use a new table format, etc.
DOTABLE	selects use of table-format for data
DOTWO	do we make two of something
FILLM	reads VLA on-line/archive format uv data tapes (post Jan 88)
FILLR	reads old VLA on-line-system tapes into AIPS
FIT2A	reads the fits input file and records it to the output ascii file
FITAB	writes images / uv data w extensions to tape in FITS format
FITLD	Reads FITS files to load images or UV (IDI or UVFITS) data to disk
FITTP	writes images / uv data w extensions to tape in FITS format
FORMAT	gives a format code number: e.g. FITS accuracy required
GSCAT	reads Fits Guide star catalog file
IMLOD	Reads tape or disk files to load images to disk
INTAPE	specifies the input tape drive number
MOUNT	makes a tape drive available to user's AIPS and tasks
NFILES	The number of files to skip, usually on a tape.
NPIECE	The number of pieces to make
OUTTAPE	The output tape drive number.
PRTTP	prints contents of tapes and disk files, all supported formats
QUANTIZE	Quantization level to use
REMHOST	gives the name of another computer which will provide service
REMTAPE	gives the number of another computer's tape device
REWIND	Verb to rewind a tape

TAPES	Verb to show the TAPES(s) available
TCOPY	Tape to tape copy with some disk FITS support
TPHEAD	Verb to list image header from FITS or IBM-CV tape
TPMON	Information about the TPMON "Daemon"
UVLOD	Read export or FITS data from a tape or disk
VLAMODE	VLA observing mode
VLAOBS	Observing program or part of observer's name

13.35 TASK

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TASKS
Type:  General type of POPS symbol (not in symbol table)
Use:   Tasks are separate programs which may be started by
       AIPS and which receive their input parameters from
       AIPS.  In the interactive AIPS, tasks run
       asynchronously from AIPS.  In the batch AIPS,
       the language processor waits for each task to finish
       before starting another one.
Grammar:    TASK = 'name' ;   GO
       will cause the task whose name is assigned to the
       string adverb TASK to be started.  Note: the name
       should have no leading blanks and should be no longer
       than 5 characters.
Alternative grammar:    GO  name ;
       where name is the name of the task to be run.
Related adverbs:
   TASK       Task name
   DOWAIT     On "GO", wait for task completion before returning
                 to AIPS control
   VERSION    Version of task to be executed.
   QCREATE    Create files by fast or more reliable methods
Related verbs:
   GO         Initiate a shed task
   HELP       List information about a task
   INP        List adverb values for a task
   INPUTS     Same as INP but also written to MSG file
   SPY        Inquire which tasks are active
   WAITTASK   Suspend AIPS operation until a specific task
                 is complete
   ABORTASK   Kill a task immediately
   TGET       Get adverb values from last execution of TASK
   TPUT       Save adverb values without execution of TASK
   TGINDEX    List all TGET/SAVE files
****************************************************************
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ACCOR	Corrects cross amplitudes using auto correlation measurements
ACFIT	Determine antenna gains from autocorrelations
ACIMG	Makes image of autocorrelation data showing time vs frequency
ACLIP	edits suto-corr data for amplitudes, phases, and weights out of range
ACSCL	Corrects cross amplitudes using auto correlation measurements
ADDIF	Adds an IF axis to a uv data set
AFARS	Is used after FARS to determine Position and Value of the maximum
AFILE	sorts and edits MkIII correlator A-file.
AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
AHIST	Task to convert image intensities by adaptive histogram

AIPS	AIPS main program for interactive use
AIPSB	AIPS main program for executing batch jobs
AIPSC	AIPS main program for testing and queuing batch jobs
ALBUS	Calculate ionospheric delay and Faraday rotation using ALBUS
ALVAR	Plots the Allan Variance statistic of a UV data set
ALVPR	prints statistics on the Allan Variance of a UV data set
AMKAT	renumbers MeerKAT antennas so taht antenna number =¿ station ID
ANBPL	plots and prints uv data converted to antenna based values
ANCAL	Places antenna-based Tsys and gain corrections in CL table
ANTAB	Read amplitude calibration information into AIPS
APCAL	Apply TY and GC tables to generate an SN table
APCLN	Deconvolves images with CLEAN algorithm
APGPS	Apply GPS-derived ionospheric corrections
APGS	deconvolves image with Gerchberg-Saxton algorithm
APVC	Deconvolves images with van Cittert algorithm
ATLOD	Reads ATCA data in RPFITS format into AIPS
ATMCA	Determines delay/phase gradient from calibrator observations
AVER	Averages over time UV data sets in 'BT' order
AVGWT	Computes the average visibility weight of the included data
AVSPC	Averages uv-data in the frequency domain
AVTP	Positions tape to desired file
BAKLD	reads all files of a catalog entry from BAKTP tape
BAKTP	writes all files of a catalog entry to tape in host format
BASRM	Task to remove a spectral baseline from total power spectra
BATER	stand-alone program to prepare and submit batch jobs
BDAPL	Applies a BD table to another data set
BDEPO	computes depolarization due to rotation measure gradients
BLANK	blanks out selected, e.g. non-signal, portions of an image
BLAPP	applies baseline-based fringe solutions a la BLAPP
BLAVG	Average cross-polarized UV data over baselines.
BLCAL	Compute closure offset corrections
BLCHN	Compute closure offset corrections on a channel-by-channel basis
BLING	find residual rate and delay on individual baselines
BLOAT	converts line data to greater number channels
BLPCL	Do divide by I,Q,U models for circular polarization BLCHN
BLPLT	Plots BLCAL tables in 2 dimensions as function of baseline and IF
BLSUM	sums images over irregular sub-images, displays spectra
BLWUP	Blow up an image by any positive integer factor.
BOXES	Adds Clean boxes to BOXFILE around sources.
BPASS	computes spectral bandpass correction table
BPCOR	Correct BP table.
BPEDT	Interactive TV task to edit uv data based on BP tables
BPEPL	Plots bandpass tables overlaying multiple times like BPEDT
BPERR	Print and plot BPASS closure outputs
BPFLG	Flgas uv data based on bad BP values
BPLOT	Plots bandpass tables in 2 dimensions as function of time
BPPLT	Plots selected contents of bandpass (BP) files versus time
BPSMO	Smooths or interpolates bandpass tables to regular times
BPWAY	Determines channel-dependent relative weights
BPWGT	Calibrates data and scales weights by bandpass correction
BSAVG	Task to do an FFT-weighted sum of beam-switched images
BSCAN	seeks best scan to use for phase cal, fringe search, ..
BSCLN	Hogbom Clean on beam-switched difference image
BSCOR	Combines two beam-switched images
BSFIX	Corrects the ra/dec offsets recorded by the 12m
BSGEO	Beam-switched Az-El image to RA-Dec image translation
BSGRD	Task to image beam-switched single-dish data
BSMAP	Images weak sources with closure phases
BSMOD	creates single-dish UV beam-switched data with model sources

BSPRT	print BS tables
BSROT	modifies SD beam-switch continuum data for error in throw
BSTST	Graphical display of solutions to frequency-switched data
CALIB	determines antenna calibration: complex gain
CALRD	Reads calibrator source model-image FITS file
CALWR	writes calibrator source model images w CC files to FITS disk files
CANDY	user-definable (paraform) task to create an AIPS image
CAPLT	plots closure amplitude and model from CC file
CC2IM	Make model image from a CC file
CCEDT	Select CC components in BOXes and above mininum flux.
CCFND	prints the contents of a Clean Components extension file.
CCGAU	Converts point CLEAN components to Gaussians
CCMOD	generates clean components to fit specified source model
CCMRG	sums all clean components at the same pixel
CCNTR	Generate a contour plot file from an image with CC or MF plotted
CCRES	Removes or restores a CC file to a map with a gaussian beam.
CCSEL	Select signifigant CC components
CENTR	modifies UV data to center the reference channel
CHEBI	Make text file to plot Chebyshev polynomials
CHKFC	makes images of Clean boxes from Boxfile
CL2HF	Convert CL table to HF table
CLCAL	merges and smooths SN tables, applies them to CL tables
CLCOP	copy CL/SN file calibration between polarizations or IFs
CLCOR	applies user-selected corrections to the calibration CL table
CLINV	copy CL/SN file inverting the calibration
CLIP	edits data based on amplitudes, phases, and weights out of range
CLNUP	removes old MS, RL, SG, TG and ?? files from AIPS disks
CLOSE	plots closure phase or amplitude spectra averaged over closures
CLPLT	plots closure phase and model from CC file
CLSMO	smooths a calibration CL table
CLVLB	Corrects CL table gains for pointing offsets in VLBI data
CMPLX	Combines complex images by a variety of mathematical methods.
CNTR	generate a contour plot file or TV plot from an image
COHER	Baseline Phase coherence measurement
COMB	combines two images by a variety of mathematical methods
CONFI	Optimize array configuration by minimum side lobes
CONPL	Plots AIPS gridding convolution functions
CONVL	convolves an image with a gaussian or another image
CORER	calculates correlator statistics and flags bad ones
CORFQ	corrects uvw for incorrect observing frequency
CPASS	computes polynomial spectral bandpass correction table
CPYRT	replaces history with readme file, inserts copyright
CSCOR	applies specified corrections to CS tables
CUBIT	Model a galaxy's density and velocity distribution from full cube
CVEL	shifts spectral-line UV data to a given velocity
CXCLN	Complex Hogbom CLEAN
DAYFX	Fixes day number problems left by FILLM
DBAPP	appends one or more data sets to the output data set
DBCON	concatenates two UV data sets
DCONV	deconvolves a gaussian from an image
DECOR	Measures the decorrelation between channels and IF of uv data
DEFLG	edits data based on decorrelation over channels and time
DELZN	Determines residual atmosphere depth at zenith and clock errors
DENAN	modifies UV data flagging all NaNs
DESCM	copies a portion of a UV data set
DFCOR	Applies ATMO differential corrections to the calibration CL table
DFQID	modifies UV data changing the indicated FQIDs
DFTIM	Makes image of DFT at arbitrary point showing time vs frequency
DFTPL	plots DFT of a UV data set at arbitrary point versus time

DGAUS	Correct UV model for convolution by Clean beam
DIFRL	divides the RR data by LL data
DIFUV	Outputs the difference of two matching input uv data sets
DISKU	shows disk use by one or all users
DQUAL	Rearranges source list, dropping qualifiers
DRCHK	stand-alone program checks system setup files for consistency
DSKEW	Geometric interpolation correction for skew
DSORC	copies a data set elliminating some source numbers
DSTOK	Drops the cross-hand polarizations
DT2PD	Write PD table from a PD table text file
DTCHK	Task to check results of a test using simulated data.
DTSIM	Generate fake UV data
DTSUM	Task to provide a summary of the contents of a dataset
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
ELFIT	Plots/fits selected contents of SN, TY, SY, PC or CL files
ELINT	Determines and removes gain dependence on elevation
EVACL	Evaluates statistics in closure phase and amplitude
EVASN	Evaluates statistics in SN/CL tables
EVAUV	Subtracts & divides a model into UV data, does statistics on results
EXTAB	exports AIPS table data as tab-separated text
FACES	makes images of catalog sources for initial calibration
FARAD	add ionospheric Faraday rotation to CL table
FARS	Faraday rotation synthesis based on the brightness vs wavelength
FETCH	Reads an image from an external text file.
FFT	Takes Fourier Transform of an image or images
FGCNT	Counts samples comparing two flag tables or detailed count from ¡= 1
FGDIF	Compares affect of 2 FG tables
FGPLT	Plots selected contents of FG table
FGPRT	Prints counts of selected portions of an FG table.
FGSPW	Flags bad spectral windows
FGTAB	writes frequency-range flags to a text file to be read by UVFLG
FILIT	Interactive BOXFILE editing with facet images
FILLM	reads VLA on-line/archive format uv data tapes (post Jan 88)
FILLR	reads old VLA on-line-system tapes into AIPS
FINDR	Find normal values for a uv data set
FIT2A	reads the fits input file and records it to the output ascii file
FITAB	writes images / uv data w extensions to tape in FITS format
FITLD	Reads FITS files to load images or UV (IDI or UVFITS) data to disk
FITTP	writes images / uv data w extensions to tape in FITS format
FIXAL	least squares fit aliasing function and remove
FIXAN	fixes the contents of the ANtenna extension file
FIXBX	converts a BOXFILE to another for input to IMAGR
FIXFR	Modifies UV data set making all frequencies increase or decrease
FIXRL	correctes right vs left polarizations for a list of antennas
FIXWT	Modify weights to reflect amplitude scatter of data
FLAGR	Edit data based on internal RMS, amplitudes, weights
FLATN	Re-grid multiple fields into one image incl sensitivity
FLGIT	flags data based on the rms of the spectrum
FLOPM	reverses the spectral order of UV data, can fix VLA error
FQUBE	collects n-dimensional images into n+1-dimensional FREQID image
FRCAL	Faraday rotation self calibration task
FRING	fringe fit data to determine antenna calibration, delay, rate
FRMAP	Task to build a map using fringe rate spectra
FRPLT	Task to plot fringe rate spectra
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
FTFLG	interactive flagging of UV data in channel-time using the TV
FUDGE	modifies UV data with user's algorithm: paraform task
FXPOL	Corrects VLBA polarization assignments

FXTIM	fixes start date so all times are positive
FXVLA	Task to correct VLA data for on-line errors in special cases.
FXVLB	Builds a CQ table to enable VLBA correlator loss corrections
GAL	Determine parameters from a velocity field
GCPLT	Plots gain curves from text files
GETJY	determines calibrator flux densities
GLENS	models galaxy gravitational lens acting on 3 component source
GPSDL	Calculate ionospheric delay and Faraday rotation corrections
GREYS	plots images as contours over multi-level grey
GRIPR	standalone program to enter suggestions/complaints to AIPS
GSCAT	reads Fits Guide star catalog file
GSTAR	Task to read a Guide Star (UK) table and create an ST table.
HA2TI	Converts data processed by TI2HA (STUFFER) back to real times
HAFIX	Recomputes u,v,w when time is hour angle (UVdata is output of TI2HA)
HF2SV	convert HF tables from FRING/MBDLY to form used by Calc/Solve
HFPRT	write HF tables from CL2HF
HGEOM	interpolates image to different gridding and/or geometry
HISEQ	task to translate image by histogram equalization
HLPAGAUS	Interactive Gaussian absorption fitting task AGAUS - run-time help
HLPCLEAN	Cleaning tasks - run-time help
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFILIT	Interactive Clean box file editing with image display - run-time help
HLPFTFLG	Interactive time-channel visibility Editor - run-time help
HLPIBLED	Interactive Baseline based visibility Editor - run-time help
HLPLISPX	Fits spectral index model to data in text file - run-time help
HLPPCFLG	Interactive time-channel PC table Editor PCFLG - run-time help
HLPPLAYR	OOP TV class demonstration task - run-time help
HLPRMFIT	Polarization fitting task RMFIT - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
HLPSPFLG	Interactive time-channel visibility Editor SPFLG - run-time help
HLPTVFLG	Interactive time-baseline visibility Editor TVFLG - run-time help
HLPTVHLD	Interactive image display with histogram equalization - run-time help
HLPTVHUI	Interactive intensity-hue-saturation display - run-time help
HLPTVIEW	Interactive display of cube in 3 transpositions - run-time help
HLPTVRGB	Interactive red-green-blue display - run-time help
HLPTVSAD	Find & fit Gaussians to an image with interaction - run-time help
HLPTVSPC	Interactive display of spectra from a cube - run-time help
HLPTVSPX	Fits 1-dimensional spectral index model to data - run-time help
HLPUFLAG	Edit uv-data on a grid UFLAG - run-time help
HLPWIPER	edit uv data from UVPLT-like plot WIPER - run-time help
HLPXGAUS	Interactive Gaussian fitting task XGAUS - run-time help
HLPZAMAN	Fits 1-dimensional Zeeman model to absorption data - run-time help
HLPZEMAN	Fits 1-dimensional Zeeman model to data - run-time help
HOCLN	Task to do a clean of holography images
HOLGR	Read & process holography visibility data to telescope images
HOLIS	Prints information about holography sampling
HOLOG	Read & process holography visibility data to telescope images
HUINT	make RGB image from images of intensity & hue, like TVHUEINT
IANTB	Writes out GC and TY data in ANTAB format

IBLED	Interactive BaseLine based visibility EDitor
IM2CC	Task to convert an image to multi-facet Clean Components
IM2UV	converts an image to a visibility data set
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
IMCLP	Clip an image to a specified range.
IMEAN	displays the mean & extrema and plots histogram of an image
IMERG	merges images of different spatial resolutions
IMFIT	Fits Gaussians to portions of an image
IMFLT	fits and removes a background intensity plane from an image
IMLHS	converts images to luminosity/hue TV display
IMLIN	Fits and removes continuum emission from cube
IMLOD	Reads tape or disk files to load images to disk
IMMOD	adds images of model objects to an image
IMRMS	Plot IMEAN rms answers
IMTXT	Write an image to an external text file.
IMVIM	plots one image's values against another's
INDXH	writes index file describing contents of UV data base
INDXR	writes index file describing contents of UV data base
IRING	integrates intensity / flux in rings / ellipses
ISPEC	Plots and prints spectrum of region of a cube
JMFIT	Fits Gaussians to portions of an image
KNTR	make a contour/grey plot file from an image w multiple panels
KRING	fringe fit data to determine antenna calibration, delay, rate
LAYER	Task to create an RGB image from multiple images
LDGPS	load GPS data from an ASCII file
LGEOM	regrids images with rotation, shift using interpolation
LISPX	Fits spectral indexes to a list of spectra, allows interactive edit
LISTR	prints contents of UV data sets and assoc. calibration tables
LISUN	prints contents of UV data sets with Sun angles
LOCIT	fits antenna locations from SN-table data
LPCAL	Determines instrumental polarization for UV data
LTESS	makes mosaic images by linear combination
LWPLA	translates plot file(s) to a PostScript printer or file
M3TAR	translate Haystack MKIII VLBI format "A" TAR's into AIPS
MANDL	creates an image of a subset of the Mandlebrot Set
MAPBM	Map VLA beam polarization
MARSP	Check planetary polarization angles, plot histogram of differences
MASKS	Makes mask image of Clean boxes from boxfile
MATCH	changes antenna, source, FQ numbers to match a data set
MATHS	operates on an image with a choice of mathematical functions
MBDLY	Fits multiband delays from IF phases, updates SN table
MCUBE	collects n-dimensional images into n+1-dimensional image
MEDI	combines four images by a variety of mathematical methods
MF2ST	Task to generate an ST ext. file from Model Fit ext. file
MFIMG	Image the Earth magnetic field model or TEC data used by TECOR
MFPRT	prints MF tables in a format needed by modelling software
MK3IN	translate Haystack MKIII VLBI format "A" tapes into AIPS
MK3TX	extract text files from a MKIII VLBI archive tape
MOD3D	Computes a 3D CC model from a set of facets
MODAB	Makes simple absorption/emission spectral-line image in I/V
MODIM	adds images of model objects to image cubes in IQU polarization
MODSP	adds images of model objects to image cubes in I/V polarization
MODVF	task to create a warped velocity field
MOMFT	calculates images of moments of a sub-image
MOMNT	calculates images of moments along x-axis (vel, freq, ch)
MORIF	Combines IFs or breaks spectral windows into multiple windows (IFs)
MOVE	Task to copy or move data from one user or disk to another
MSORT	Sort a UV dataset into a specified order
MTARS	Compute model inputs to TARS

MULIF	Change number of IFs in output
MULTI	Task to convert single-source to multi-source UV data
MWFLT	applies linear & non-linear filters to images
NANS	reads an image or a UV data set and looks for NaNs
NINER	Applies various 3x3 area operaters to an image.
NNLSQ	Non-Negative-Least-Squares decomposition of spectrum
NOBAT	Task to lock lower priority users out of the AP
NOIFS	makes all IFs into single spectrum
OBEDT	Task to flag data of orbiting antennas
OBPLT	Plot columns of an OB table.
OBTAB	Recalculate orbit parameters and other spacecraft info
OFLAG	uses on-line flag table information to write a flag table
OFUDG	modifies UV data with user's algorithm no cal adverbs: paraform task
OGEOM	Simple image rotation, scaling, and translation
OHGEO	Geometric interpolation with correction for 3-D effects
OMFIT	Fits sources and, optionally, a self-cal model to uv data
OOSRT	Sort a UV dataset into a specified order
OOSUB	Subtracts/divides a model from/into a uv data base
OTFBS	Translates on-the-fly continuum SDD format to AIPS UV file
OTFIN	Lists on-the-fly single-dish SDD format data files
OTFUV	Translates on-the-fly single-dish SDD format to AIPS UV file
PADIM	Task to increase image size by padding with some value
PANEL	Convert HOLOG output to panel adjustment table
PASTE	Pastes a selected subimage of one image into another.
PATGN	Task to create a user specified test or primary-beam pattern
PBCOR	Task to apply or correct an image for a primary beam
PBEAM	Fits the analytic function to the measured values of the beam
PCABL	Copies the Cable cal values from PC table 1 to PC table n
PCAL	Determines instrumental polarization for UV data
PCASS	Finds amplitude bandpass shape from pulse-cal table data
PCAVG	Averages pulse-cal (PC) tables over time
PCCOR	Corrects phases using PCAL tones data from PC table
PCDIV	Scales pulse-cal amplitudes by Tsys or Psum
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFIT	Finds delays and phases using a pulse-cal (PC) table
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PCHIS	Generates a histogram plot file from text input, e.g. from PCRMS
PCLOD	Reads ascii file containing pulse-cal info to PC table.
PCNTR	Generate plot file with contours plus polarization vectors
PCPLT	Plots pulse-cal tables in 2 dimensions as function of time
PCRMS	Finds statistics of a pulse-cal table; flags bad times and channels
PCVEL	shifts spectral-line UV data to a given velocity: planet version
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
PDPLT	Plots selected contents of PD tables
PEEK	fits pointing model function to output from the VLA
PFPL1	Paraform Task to generate a plot file: (does grey scale)
PFPL2	Paraform Task to generate a plot file: (slice intensity)
PFPL3	Paraform Task to generate a plot file: (does histogram)
PGEOM	Task to transform an image into polar coordinates.
PHASE	Baseline Phase coherence measurement
PHNEG	Negates a UV datafile's visibility phase.
PHSRF	Perform phase-referencing within a spectral line database.
PLAYR	Task to load one or two images and play with them on the TV
PLCUB	Task to plot intensity vs x panels on grid of y,z pixels
PLOTC	Plots color schems used by 3-color plot tasks
PLOTR	Basic task to generate a plot file from text input
PLRFI	Plots spectral statistics from output of VBRFI & VLBRF
PLROW	Plot intensity of a series of rows with an offset.
POLCO	Task to correct polarization maps for Ricean bias

POSSM	Task to plot total and cross-power spectra.
PPAPP	Applies Right minus Left phase difference to a 2nd data set
PROFL	Generates plot file for a profile display.
PRRFI	Prints excess spectral statistics from output of VBRFI & VLBRF
PRTAB	prints any table-format extension file
PRTAC	prints contents and summaries of the accounting file
PRTAN	prints the contents of the ANtenna extension file
PRTCC	prints the contents of a Clean Components extension file.
PRTIM	prints image intensities from an MA catalog entry
PRTOF	prints on-line flag table information
PRTSD	prints contents of AIPS single-dish data sets
PRTSY	Task to print statistics from the SY table
PRTTP	prints contents of tapes and disk files, all supported formats
PRTUV	prints contents of a visibility (UV) data set
QBEAM	Plot holography data as contour image and outputs interpolated image
QUACK	Flags beginning or end portions of UV-data scans
QUFIX	determines Right minus Left phase difference, corrects cal files
QUOUT	writes text file of Q, U versus frequency to be used by RLDIF
QUXTR	extracts text files from Q,U cubes for input to TARS
REAMP	Scale visibility amplitudes by IF- or subarray-dependent factor
REFLG	Attempts to compress a flag table
REGRD	Regrids an image from one co-ordinate frame to another
REIFS	Breaks spectral windows into multiple spectral windows (IFs)
REMAG	Task to replace magic blanks with a user specified value
RESEQ	Renumber antennas
REWAY	computes weights based in rms in spectra
REWGT	modifies UV data re-scaling the weights only
RFARS	Correct Q/U cubes for Faraday rotation synthesis results
RFI	Look for RFI in uv data
RFLAG	Flags data set based on time and freq rms in fringe visibilities
RGBMP	Task to create an RGB image from the 3rd dim of an image
RIFRM	Task to modify a CL and TE table with IFRM values from ALBUS files
RIRMS	computes rms of real/imag of a selected subset of a uv data set
RLCAL	Determines instrumental right-left phase versus time (a self-cal)
RLCOR	corrects a data set for R-L phase differences
RLDIF	determines Right minus Left phase difference, corrects cal files
RLDLY	fringe fit data to determine antenna R-L delay difference
RM	Task to calculate rotation measure and magnetic field
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
RMSD	Calculate rms for each pixel using data in a box around the pixel
RMTFC	Convolves rotation measure transfer function with slab models.
RSPEC	Plots and prints spectrum of rms of a cube
RSTOR	Restores a Clean component file to a map with a Gaussian beam.
RTIME	Task to test compute times
SABOX	create box file from source islands in facet images
SAD	Finds and fits Gaussians to portions of an image
SBCOR	Task to correct VLBA data for phase shift between USB & LSB
SCIMG	Full-featured imaging plus self-calibration loop with editing
SCLIM	operates on an image with a choice of mathematical functions
SCMAP	Imaging plus self-calibration loop with editing
SDCAL	Task to apply single dish calibration
SDCLN	deconvolves image by Clark and then "SDI" cleaning methods
SDGRD	Task to select and image random-position single-dish data
SDIMG	Task to select and image random-position single-dish data
SDLSF	least squares fit to channels and subtracts from SD uv data
SDMOD	modifies single-dish UV data with model sources
SDTUV	Task to convert SD table files to UV like data.
SDVEL	shifts spectral-line single-dish data to a given velocity

SERCH	Finds line signals in transposed data cube
SETAN	Reads an ANtenna file info from a text file
SETFC	Makes a BOXFILE for input to IMAGR, recommends cell and image sizes.
SETJY	Task to enter source info into source (SU) table.
SHADO	Calculate the shadowing of antennas at the array
SHADW	Generates the "shadowed" representation of an image
SHAHO	Flags Holography data for shadowing
SHOUV	displays uv data in various ways.
SKYVE	Regrids a DSS image from one co-ordinate frame to another
SL2PL	Task to convert a Slice File to a Plot File
SLCOL	Task to collate slice data and models.
SLFIT	Task to fit gaussians to slice data.
SLICE	Task to make a slice file from an image
SLPRT	Task to print a Slice File
SMOTH	Task to smooth a subimage from upto a 7-dim. image
SNBLP	Plots selected contents of SN or CL files on a baseline basis
SNCOP	Task to copy SN table averaging some input IFs
SNCOR	applies user-selected corrections to the calibration SN table
SNDUP	copies and duplicates SN table from single pol file to dual pol
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
SNFIT	Fits parabola to SN amplitudes and plots result
SNFLG	Writes flagging info based on the contents of SN files
SNIFS	Plots selected contents of SN, TY, SY, PC or CL files by IF
SNP2D	Task to convert SN table single-channel phase to delay
SNPLT	Plots selected contents of SN, SY, TY, PC or CL files versus time
SNREF	Chooses best reference antenna to minimize R-L differences
SNRMS	Print statistics for selected contents of SN, SY, TY, PC or CL files
SNSMO	smooths and filters a calibration SN table
SOLCL	adjust gains for solar data according to nominal sensitivity
SOUSP	fits source spectral index from SU table or adverbs
SPCAL	Determines instrumental polzn. for spec. line UV data
SPCOR	Task to correct an image for a primary beam and spectral index
SPECR	Spectral regridding task for UV data
SPFIX	Makes cube from input to and output from SPIXR spectral index
SPFLG	interactive flagging of UV data in channel-TB using the TV
SPIXR	Fits spectral indexes to each row of an image incl curvature
SPLAT	Applies calibration and splits or assemble selected sources.
SPLIT	converts multi-source to single-source UV files w calibration
SPMOD	Modify UV database by adding a model with spectral lines
SPRMS	Plots spectral statistics of a selected subset of a uv data set
SPXMD	adds images of model objects to image cubes in spectral index
SQASH	Task to collapse several planes in a cube into one plane or row
STACK	Task to co-add a set of 2-dimensional images with weighting
STARS	Task to generate an ST ext. file with star positions
STATIONS	GPS stations used by ALBUS from 3 Sept, 2024
STEER	Task which deconvolves the David Steer way.
STESS	Task which finds sensitivity in mosaicing
STFND	Task to find stars in an image and generate an ST table.
STFUN	Task to calculate a structure function image
STRAN	Task compares ST tables, find image coordinates (e.g. guide star)
SUBIM	Task to select a subimage from up to a 7-dim. image
SUFIX	modifies source numbers on uv data
SUMIM	Task to sum overlapping, sequentially-numbered images
SUMSQ	Task to sum the squared pixel values of overlapping images
SWAPR	modifies UV data by swapping real and imaginary parts
SWPOL	Swap polarizations in a UV data base
SY2TY	Task to generate a TY extension file from an EVLA SY table
SYFIX	modifies OTF SY DATA to match the source numbers in the data set
SYPRT	Task to print values from the SY table

SYSOL	undoes and re-does nominal sensitivity application for Solar data
SYVSN	Plots selected SY/TY data with SN solution values versus time
TABED	Task to edit tables
TACOP	task to copy tables, other extension files
TADIF	prints differences between two table-format extension files
TAFFY	User definable task to operate on an image
TAFLG	Flags data in a Table extension file
TAMRG	Task to merge table rows under specified conditions
TAPLT	Plots data from a Table extension file
TAPPE	Task to append 2 tables and merge to output table
TARPL	Plot input and output text files of the TARS task
TARS	Simulation of Faraday rotation synthesis (mainly task FARS)
TASAV	Task to copy all extension tables to a dummy uv or map file
TASRT	Task to sort extension tables.
TBAVG	Time averages data combining all baselines.
TBDIF	Compare entries in two tables
TBIN	Reads a text file AIPS table into AIPS
TBOUT	Writes an AIPS table into a text file for user editting.
TBSUB	Make a new table from a subset of an old table
TBTSK	Paraform OOP task for tables
TCOPY	Tape to tape copy with some disk FITS support
TECOR	Calculate ionospheric delay and Faraday rotation corrections
TEPLT	Plots selected contents of TE (TECOR) parameter tables
TFILE	sorts and edits MkIII correlator UNIX-based A-file.
TGREP	finds all user numbers which have used specified task
TI2HA	modifies times in UV data to hour angles
TIORD	checks data for time baseline ordering, displays failures
TKPL	Task to send a plot file to the TEK
TLCAL	Converts JVLA telcal files to an SN file
TRANS	Task to transpose a subimage of an up to 7-dim. image
TRUEP	determines true antenna polarization from special data sets
TVCPS	Task to copy a TV screen-image to a PostScript file.
TVDIC	Task to copy a TV screen-image to a Dicomed film recorder.
TVFLG	interactive flagging of UV data using the TV
TVHLD	Interactive task to load an image to the TV with histogram equalization
TVHUI	make TV image from images of intensity, hue, saturation
TVIEW	Display image cube in all 3 transpositions with rotation & reference
TVPL	Display a plot file on the TV
TVRGB	make TV image from images of true color (RGB) images
TVSAD	Finds and fits Gaussians to portions of an image with interaction
TVSPC	Display images and spectra from a cube
TVSPX	Fits spectral indexes to each image row, allows interactive edit
TXPL	Displays a plot (PL) file on a terminal or line printer
TYAPL	undoes and re-does nominal sensitivity application
TYCOP	copy TY or SY table calibration between IFs
TYSMO	smooths and filters a calibration TY or SY table
UBAVG	Baseline dependent time averaging of uv data
UFLAG	Plots and edits data using a uv-plane grid and the TV
UJOIN	modifies UV data converting IFs to spectral channels
UNCAL	sets up tables for uncalibrating Australia Telescope data
UNSPX	Removes spectral index model from a data cube
USUBA	Assign subarrays within a uv-data file
UTESS	deconvolves images by maximizing emptiness
UV2MS	Append single-source file to multi-source file.
UV2TB	Converts UV autocorrelation spectra to tables
UVADC	Fourier transforms and corrects a model and adds to uv data.
UVADD	Combines two matching uv data sets
UVAVG	Average or merge a sorted (BT, TB) uv database
UVBAS	averages several channels and subtracts from uv data.

UVCMP	Convert a UV database to or from compressed format
UVCON	Generate sample UV coverage given a user defined array layout
UVCOP	Task to copy a subset of a UV data file
UVCRS	Finds the crossing points of UV-ellipses.
UVDEC	Decrements the number of spectral channels, keeping every nth
UVDGP	Copy a UV data file, deleting a portion of it
UVDI1	Subtract UV data(averaged up to one time) from the other UV data
UVDIF	prints differences between two UV data sets
UVFIL	Create, fill a uv database from user supplied information
UVFIT	Fits source models to uv data.
UVFIX	Recomputes u,v,w for a uv database
UVFLG	Flags UV-data
UVFND	prints selected data from UV data set to search for problems
UVFRE	Makes one data set have the spectral structure of another
UVGIT	Fits source models to uv data.
UVGLU	Glues UV data frequency blocks back together
UVHGM	Plots statistics of uv data files as histogram.
UVHIM	Makes image of the histogram on two user-chosen axes
UVHOL	Prints holography data from a UV data base with calibration
UVIMG	Grid UV data into an "image"
UVLIN	Fits and removes continuum visibility spectrum, also can flag
UVLOD	Read export or FITS data from a tape or disk
UVLSD	least squares fit to channels and divides the uv data.
UVLSF	least squares fit to channels and subtracts from uv data.
UVMAP	makes images from calibrated UV data.
UVMLN	edits data based on the rms of the spectrum
UVMOD	Modify UV database by adding a model incl spectral index
UVMTH	Averages one data set and applied it to another.
UVNOU	flags uv samples near the U,V axes to reduce interference
UVPLT	Plots data from a UV data base in multiple ways
UVPOL	modifies UV data to make complex image and beam
UVPRM	measures parameters from a UV data base
UVPRT	prints data from a UV data base with calibration
UVRFI	Mitigate RFI by Fourier transform or fitting the circle
UVRMS	computes statistics of a selected subset of a uv data set
UVSEN	Determine RMS sidelobe level and brightness sensitivity
UVSIM	Generate sample UV coverage given a user defined array layout
UVSRT	Sort a UV dataset into a specified order
UVSUB	Subtracts/divides a model from/into a uv data base
UVWAX	flags uv samples near the U,V axes to reduce interference
VBCAL	Scale visibility amplitudes by antenna based constants
VBGLU	Glues together data from multiple passes thru the VLBA corr.
VBMRG	Merge VLBI data, eliminate duplicate correlations
VBRFI	Plots spectral statistics of VLBA autocorrelation data for RFI
VH2RL	Converts from linear to circular polarization and vice versa
VHCAL	Do divide by I,Q,U models for linear polarization data
VHDIF	find/apply V minus H linear polarization phase difference
VHMOD	Compute linear polarization point source model, applies to data
VLABP	VLA antenna beam polarization correction for snapshot images
VLAMP	Makes ANTAB file for phased VLA used in VLBI observations
VLANT	applies VLA/EVLA antenna position corrections from OPs files
VLBCD	Reads ascii file containing VLBA calibration info into a CD table
VLBIN	Task to read VLBI data from an NRAO/MPI MkII correlator
VLBRF	Plots spectral statistics of VLBA autocorrelation data for RFI
VLBSY	Reads ascii file containing VLBA total power info into an SY table
VLOG	Pre-process external VLBA calibration files
VPFLG	Resets flagging to all or all corss-hand whenever some are flagged
VPLOT	Plots uv data and model from CC file
VTESS	Deconvolves sets of images by the Maximum Entropy Method

VTEST	Measures velocity discrepancy across fields
WARP	Model warps in Galaxies
WETHR	Plots selected contents of WX tables, flags data based on WX
WIPER	plots and edits data from a UV data base using the TV
WTMOD	modifies weights in a UV data set
WTSUM	Task to do a a sum of images weighted by other images
WXLOD	Reads KEYIN-format weather information making WX table
XBASL	Fits and subtracts nth-order baselines from cube (x axis)
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
XMOM	Fits one-dimensional moments to each row of an image
XPLOT	Plots image rows one at a time on the graphics or TV screen
XSMTH	Smooth data along the x axis
XSUM	Sum or average images on the x axis
XTRAN	Create an image with transformed coordinates
XYDIF	find/apply X minus Y linear polarization phase difference
XYMOD	Compute linear polarization point source model, applies to data
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.36 TV

BLANK	blanks out selected, e.g. non-signal, portions of an image
CHARMULT	Changes the multiplication factor for TV characters
CNTR	generate a contour plot file or TV plot from an image
COLORS	specifies the desired TV colors
COSTAR	Verb to plot a symbol at given position on top of a TV image
COTVLOD	Proc to load an image into a TV channel about a coordinate
CURBLINK	switch TV cursor between steady and blinking displays
CURVALUE	displays image intensities selected via the TV cursor
DEFCOLOR	Sets adverb PLCOLORS to match s default XAS TV
DELBOX	Verb to delete boxes with TV cursor & graphics display.
DELTAX	Increment or size in X direction
DELTAY	Increment or size in Y direction
DFILEBOX	Verb to delete Clean boxes with TV cursor & write to file
DONEWTAB	do we make new tables, use a new table format, etc.
DOTV	selects use of TV display option in operation
DRAWBOX	Verb to draw Clean boxes on the display
FACTOR	scales some display or CLEANing process
FILEBOX	Verb to reset Clean boxes with TV cursor & write to file
FILIT	Interactive BOXFILE editing with facet images
GR2CHAN	specifies a second TV graphics channel to be used
GRBLINK	Verb which blinks 2 TV graphics planes
GRCHAN	specifies the TV graphics channel to be used
GRCLEAR	clears the contents of the specified TV graphics channels
GREAD	reads the colors of the specified TV graphics channel
GROFF	turns off specified TV graphics channelS
GRON	turns on specified TV graphics channelS
GWRITE	Sets the colors of the specified TV graphics channel
HLPTVHLD	Interactive image display with histogram equalization - run-time help
HLPTVIEW	Interactive display of cube in 3 transpositions - run-time help
HLPTVSAD	Find & fit Gaussians to an image with interaction - run-time help
HLPTVSPC	Interactive display of spectra from a cube - run-time help
HUEWEDGE	Show a wedge on the TV suitable for TVHUEINT displays
HUINT	make RGB image from images of intensity & hue, like TVHUEINT

IM2TV	Verb to convert pixel coordinates to TV pixels
IMERASE	replaces an image portion of the TV screen with zeros
IMLHS	converts images to luminosity/hue TV display
IMPOS	displays celestial coordinates selected by the TV cursor
IMWEDGE	load step wedge of full range of image values to TV
IMXY	returns pixel coordinates selected by the TV cursor
MFITSET	gets adverbs for running IMFIT and JMFIT
NBOXES	Number of boxes
NCCBOX	Number of clean component boxes
OFFHUINT	Proc which restores TV functions to normal after TVHUEINT
OFFPSEUD	Verb which deactivates all pseudo-color displays
OFFSCROL	Verb which deactivates scroll of an image
OFFTRAN	Verb which restores transfer function to normal
OFFZOOM	Verb which returns the hardware IIS zoom to normal
OFMFILE	specifies the name of a text file containing OFM values
OKCOLORS	Sets adverb PLCOLORS to use less ink (white background)
PCNTR	Generate plot file with contours plus polarization vectors
PIX2XY	Specifies a pixel in an image
PIXAVG	Average image value
PIXRANGE	Range of pixel values to display
PIXSTD	RMS pixel deviation
PIXVAL	Value of a pixel
PROFL	Generates plot file for a profile display.
REBOX	Verb to reset boxes with TV cursor & graphics display.
REMOVIE	Verb to rerun a previously loaded (TVMOVIE) movie
REROAM	Verb to use previous roam image mode, then does roam
RGBCOLOR	specifies the desired TV graphics color
RGBGAMMA	specifies the desired color gamma corrections
RGBMP	Task to create an RGB image from the 3rd dim of an image
ROAM	Roam around an image too large for the display.
ROAMOFF	Verb to recover image from roam display in simple display mode
ROMODE	Specified roam mode
SETMAXAP	Examines/alters system parameter limiting dynamic pseudo-AP
SETSLICE	Set slice endpoints on the TV interactively
SETXWIN	Procedure to set BLC and TRC with TV cursor
STARTTV	Restarts XAS (TV), MS, TK servers that have disappered
TBLC	Gives the bottom left corner of an image to be displayed
TTRC	Specifies the top right corner of a subimage to be displayed
TV1SET	Verb to reset 1D gaussian fitting initial guess on TV plot.
TV2CHAN	Specified a second TV channel (plane) used in some operations
TV2COLOR	Verb to activate a 2-color pseudo-color display on the TV
TV3COLOR	Verb to initiate 3-color display using 3 TV channels
TVACOMPS	Verb to add slice model components directly on TV graphics
TVAGUESS	Verb to re-plot slice model guess directly on TV graphics
TVALL	Procedure loads image to TV, shows labeled wedge, enhances
TVAMODEL	Verb to add slice model display directly on TV graphics
TVANOT	Verb to load anotation to the TV image or graphics
TVARESID	Verb to add slice model residuals directly on TV graphics
TVASLICE	Verb to add a slice display on TV graphics from slice file
TVBANDW	Verb to activate three types of black and white TV enhancements
TVBLINK	Verb which blinks 2 TV planes, can do enhancement also
TVBOX	Verb to set boxes with TV cursor & graphics display.
TVBUT	Tells which AIPS TV button was pushed
TVCHAN	Specified a TV channel (plane)
TVCLEAR	Verb to clear image from TV channel(s)
TVCOLORS	Sets adverb PLCOLORS to match the TV (DOTV=1) usage
TVCOMPS	Verb to display slice model components directly on TV graphics
TVCORN	Specified the TV pixel for the bottom left corner of an image
TVCPS	Task to copy a TV screen-image to a PostScript file.

TVCUBE	Verb to load a cube into tv channel(s) & run a movie
TVDATA	displays information about the current TV display
TVDIC	Task to copy a TV screen-image to a Dicomed film recorder.
TVDIST	determines spherical distance between two pixels on TV screen
TVFACTS	displays information about the current TV display
TVFIDDLE	Verb enhances B/W or color TV image with zooms
TVFLUX	displays coordinates and values selected with the TV cursor
TVGUESS	Verb to display slice model guess directly on TV graphics
TVHELIX	Verb to activate a helical hue-intensity TV pseudo-coloring
TVHLD	Interactive task to load an image to the TV with histogram equalization
TVHUEINT	Verb to make hue/intensity display from 2 TV channels
TVHUI	make TV image from images of intensity, hue, saturation
TVIEW	Display image cube in all 3 transpositions with rotation & reference
TVILINE	Verb to draw a straight line on an image on the TV
TVINIT	Verb to return TV display to a virgin state
TVLABEL	Verb to label the (map) image on the TV
TVLAYOUT	Verb to label the holography image on the TV with panel layout
TVLEVS	Gives the peak intensity to be displayed in levels
TVLINE	Verb to load a straight line to the TV image or graphics
TVLOD	Verb to load an image into a TV channel
TVLUT	Verb which modifies the transfer function of the image
TVMAXFIT	displays fit pixel positions and intensity at maxima on TV
TVMBLINK	Verb which blinks 2 TV planes either auto or manually
TVMLUT	Verb which modifies the transfer function of the image
TVMODEL	Verb to display slice model directly on TV graphics
TVMOVIE	Verb to load a cube into tv channel(s) & run a movie
TVNAME	Verb to fill image name of that under cursor
TVOFF	Verb which turns off TV channel(s).
TVON	Turns on one or all TV image planes
TVPHLAME	Verb to activate "flame-like" pseudo-color displays
TVPL	Display a plot file on the TV
TVPOS	Read a TV screen position using cursor
TVPSEUDO	Verb to activate three types of pseudo-color displays
TVRESET	Reset the TV without erasing the image planes
TVRESID	Verb to display slice model residuals directly on TV graphics
TVRESTOR	Restarts XAS (TV), MS, TK servers that have disappered
TVRGB	make TV image from images of true color (RGB) images
TVROAM	Load up to 16 TV image planes and roam a subset thereof
TVSAD	Finds and fits Gaussians to portions of an image with interaction
TVSCROL	Shift position of image on the TV screen
TVSET	Verb to set slice Gaussian fitting initial guesses from TV plot
TVSLICE	Verb to display slice file directly on TV
TVSPC	Display images and spectra from a cube
TVSPLIT	Compare two TV image planes, showing halves
TVSTAR	Verb to plot star positions on top of a TV image
TVSTAT	Find the mean and RMS in a blotch region on the TV
TVTRANSF	Interactively alters the TV image plane transfer function
TVWEDGE	Show a linear wedge on the TV
TVWINDOW	Set a window on the TV with the cursor
TVWLABEL	Put a label on the wedge that you just put on the TV
TVXY	Pixel position on the TV screen
TVZOOM	Activate the TV zoom
TXINC	TV X coordinate increment
TYINC	TV Y coordinate increment
TZINC	TV Z coordinate increment
WEDERASE	Load a wedge portion of the TV with zeros
XAS	Information about TV-Servers

13.37 TV-APPL

AGAUS	Fits 1-dimensional Gaussians to absorption-line spectra
BLSUM	sums images over irregular sub-images, displays spectra
BPEDT	Interactive TV task to edit uv data based on BP tables
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
FTARS	Fits 1-dimensional polarization spectrum to Q/U text file
FTFLG	interactive flagging of UV data in channel-time using the TV
GAMMASET	changes the gamma-correction exponent used in the TV OFM
HLPAGAUS	Interactive Gaussian absorption fitting task AGAUS - run-time help
HLPCLEAN	Cleaning tasks - run-time help
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFILIT	Interactive Clean box file editing with image display - run-time help
HLPFTFLG	Interactive time-channel visibility Editor - run-time help
HLPIBLED	Interactive Baseline based visibility Editor - run-time help
HLPLISPX	Fits spectral index model to data in text file - run-time help
HLPPCFLG	Interactive time-channel PC table Editor PCFLG - run-time help
HLPPLAYR	OOP TV class demonstration task - run-time help
HLPRMFIT	Polarization fitting task RMFIT - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
HLPSPFLG	Interactive time-channel visibility Editor SPFLG - run-time help
HLPTVFLG	Interactive time-baseline visibility Editor TVFLG - run-time help
HLPTVHUI	Interactive intensity-hue-saturation display - run-time help
HLPTVRGB	Interactive red-green-blue display - run-time help
HLPTVSPX	Fits 1-dimensional spectral index model to data - run-time help
HLPUFLAG	Edit uv-data on a grid UFLAG - run-time help
HLPWIPER	edit uv data from UVPLT-like plot WIPER - run-time help
HLPXGAUS	Interactive Gaussian fitting task XGAUS - run-time help
HLPZAMAN	Fits 1-dimensional Zeeman model to absorption data - run-time help
HLPZEMAN	Fits 1-dimensional Zeeman model to data - run-time help
IBLED	Interactive BaseLine based visibility EDitor
IMAGR	Wide-field and/or wide-frequency Cleaning / imaging task.
LISPX	Fits spectral indexes to a list of spectra, allows interactive edit
OFMADJUS	interactive linear adjustment of current TV OFM lookup tables
OFMCONT	creates/modifies TV color OFMs with level or wedged contours
OFMDIR	lists names of the user's and system's OFM files from OFMFIL
OFMGET	loads TV OFMS from an OFM save file
OFMLIST	lists the current TV OFM table(s) on the terminal or printer
OFMSAVE	saves the TV's current OFM lookup table in a text file
OFMTWEAK	interactive modification of current TV OFM lookup tables
OFMZAP	deletes an OFM lookup table save file
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PDEDT	Interactive TV task to edit polarization D-term (PD) tables

PLAYR	Task to load one or two images and play with them on the TV
RM2PL	Plots spectrum of a pixel with RMFIT fit
RMFIT	Fits 1-dimensional polarization spectrum to Q/U cube
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
SPFLG	interactive flagging of UV data in channel-TB using the TV
TDEPEND	Time-dependent imaging procedure sequence
TVFLG	interactive flagging of UV data using the TV
TVSPX	Fits spectral indexes to each image row, allows interactive edit
UFLAG	Plots and edits data using a uv-plane grid and the TV
WIPER	plots and edits data from a UV data base using the TV
XBASL	Fits and subtracts nth-order baselines from cube (x axis)
XG2PL	Plots spectrum of a pixel with XGAUS/AGAUS and ZEMAN/ZAMAN fits
XGAUS	Fits 1-dimensional Gaussians to images: restartable
XPLOT	Plots image rows one at a time on the graphics or TV screen
ZAMAN	Fits 1-dimensional Zeeman model to absorption-line data
ZEMAN	Fits 1-dimensional Zeeman model to data

13.38 UTILITY

ANTNUM	Returns number of a named antenna
CCEDT	Select CC components in BOXes and above mininum flux.
CCSEL	Select signifigant CC components
CL2HF	Convert CL table to HF table
DOOSRO	calibrating amplitude and phase, and imaging VLA data
DOVLAMP	Produces amp calibration file for phased-VLA VLBI data
EPOCONV	Convert between J2000 and B1950 coordinates
MAXTAB	Returns maximum version number of named table
MBDLY	Fits multiband delays from IF phases, updates SN table
MK3TX	extract text files from a MKIII VLBI archive tape
MOVE	Task to copy or move data from one user or disk to another
NANS	reads an image or a UV data set and looks for NaNs
OPCODE	General adverb, defines an operation
OPTELL	The operation to be passed to a task by TELL
PIPEAIPS	calibrating amplitude and phase, and imaging VLA data
PRNUMBER	POPS number of messages
PRTIME	Time limit
RUNWAIT	Runs a task and waits for it to finish
SCANTIME	Returns time range for a given scan number
SHOW	Verblike to display the TELL adverbs of a task.
SORT	Specified desired sort order
SQASH	Task to collapse several planes in a cube into one plane or row
STRAN	Task compares ST tables, find image coordinates (e.g. guide star)
SWAPR	modifies UV data by swapping real and imaginary parts
TBDIF	Compare entries in two tables
TBIN	Reads a text file AIPS table into AIPS
TBOUT	Writes an AIPS table into a text file for user editting.
TBSUB	Make a new table from a subset of an old table
TBTSK	Paraform OOP task for tables
TCOPY	Tape to tape copy with some disk FITS support
UVAVG	Average or merge a sorted (BT, TB) uv database
UVCMP	Convert a UV database to or from compressed format
UVDI1	Subtract UV data(averaged up to one time) from the other UV data
UVNOU	flags uv samples near the U,V axes to reduce interference
UVRFI	Mitigate RFI by Fourier transform or fitting the circle
UVWAX	flags uv samples near the U,V axes to reduce interference

VLAPROCS	Procedures to simplify the reduction of VLBA data
VLARUN	Calibrating amplitude and phase, and imaging VLA data
VLASUMM	Plots selected contents of SN or CL files
VLBAAMP	applies a-priori amplitude corrections to VLBA data
VLBAARCH	Procedure to archive VLBA correlator data
VLBACALA	applies a-priori amplitude corrections to VLBA data
VLBACCOR	applies a-priori amplitude corrections to VLBA data
VLBACRPL	Plots crosscorrelations
VLBAEOPS	Corrects Earth orientation parameters
VLBAFIX	Procedure that fixes VLBA data, if necessary
VLBAFPOL	Checks and corrects polarization labels for VLBA data
VLBAFQS	Copies different FQIDS to separate files
VLBAFRGP	Fringe fit phase referenced data and apply calibration
VLBAFRNG	Fringe fit data and apply calibration
VLBAKRGP	Fringe fit phase referenced data and apply calibration
VLBAKRNG	Fringe fit data and apply calibration
VLBALOAD	Loads VLBA data
VLBAMCAL	Merges redundant calibration data
VLBAMPCL	Calculates and applies manual instrumental phase calibration
VLBAMPHC	applies VLBARUN calibration to additional phase stopping centers
VLBAPANG	Corrects for parallactic angle
VLBAPCOR	Calculates and applies instrumental phase calibration
VLBARUN	applies amplitude and phase calibration procs to VLBA data
VLBASNPL	Plots selected contents of SN or CL files
VLBASRT	Sorts VLBA data, if necessary
VLBASUBS	looks for subarrays in VLBA data
VLBASUMM	Prints a summary of a VLBI experiment
VLBATECR	Calculate ionospheric delay and Faraday rotation corrections
VLBAUTIL	Procedures to simplify the reduction of VLBA data

13.39 UV

ACCOR	Corrects cross amplitudes using auto correlation measurements
ACIMG	Makes image of autocorrelation data showing time vs frequency
ACLIP	edits suto-corr data for amplitudes, phases, and weights out of range
ACSCL	Corrects cross amplitudes using auto correlation measurements
ADDIF	Adds an IF axis to a uv data set
AFILE	sorts and edits MkIII correlator A-file.
ALIAS	adverb to alias antenna numbers to one another
ALVAR	Plots the Allan Variance statistic of a UV data set
ALVPR	prints statistics on the Allan Variance of a UV data set
AMKAT	renumbers MeerKAT antennas so taht antenna number =¿ station ID
ANBPL	plots and prints uv data converted to antenna based values
ASDMFILE	Full path to EVLA ASDM/BDF directory
ATLOD	Reads ATCA data in RPFITS format into AIPS
AVER	Averages over time UV data sets in 'BT' order
AVGWT	Computes the average visibility weight of the included data
AVOPTION	Controls type or range of averaging done by a task
AVSPC	Averages uv-data in the frequency domain
BAND	specifies the approximate frequency of UV data to be selected
BASFIT	fits antenna locations from SN-table data
BASRM	Task to remove a spectral baseline from total power spectra
BDF2AIPS	Read EVLA ASDM/BDF data into AIPS
BDFLIST	List contents of EVLA ASD data file

BIF	gives first IF (spectral window) to be included
BLAVG	Average cross-polarized UV data over baselines.
BLOAT	converts line data to greater number channels
BLPLT	Plots BLCAL tables in 2 dimensions as function of baseline and IF
BPASSPRM	Control adverb array for bandpass calibration
BPEDT	Interactive TV task to edit uv data based on BP tables
BPEPL	Plots bandpass tables overlaying multiple times like BPEDT
BPFLG	Flgas uv data based on bad BP values
BPLOT	Plots bandpass tables in 2 dimensions as function of time
BPPLT	Plots selected contents of bandpass (BP) files versus time
BPSMO	Smooths or interpolates bandpass tables to regular times
BPWAY	Determines channel-dependent relative weights
BPWGT	Calibrates data and scales weights by bandpass correction
BREAK	procedure to TELL FILLM to break all current uv files, start new
BSCAN	seeks best scan to use for phase cal, fringe search, ..
BSMOD	creates single-dish UV beam-switched data with model sources
BSROT	modifies SD beam-switch continuum data for error in throw
CALIB	determines antenna calibration: complex gain
CALMODEL	Applies SPLIT & UVSUB to make a model data set matching a calibrator
CAPLT	plots closure amplitude and model from CC file
CENTR	modifies UV data to center the reference channel
CLIP	edits data based on amplitudes, phases, and weights out of range
CLOSE	plots closure phase or amplitude spectra averaged over closures
CLPLT	plots closure phase and model from CC file
CMETHOD	specifies the method by which the uv model is computed
CMODEL	specifies the method by which the uv model is computed
COHER	Baseline Phase coherence measurement
CONFIG	Configuration ID number within an EVLA ASDM/BDF data set
CORER	calculates correlator statistics and flags bad ones
CORFQ	corrects uvw for incorrect observing frequency
CVEL	shifts spectral-line UV data to a given velocity
CXIMAGR	Grid UV data into a complex image, Fourier transform, Clean
DAYFX	Fixes day number problems left by FILLM
DBAPP	appends one or more data sets to the output data set
DBCON	concatenates two UV data sets
DECOR	Measures the decorrelation between channels and IF of uv data
DEFER	Controls when file creation takes place
DEFLG	edits data based on decorrelation over channels and time
DENAN	modifies UV data flagging all NaNs
DESCM	copies a portion of a UV data set
DFQID	modifies UV data changing the indicated FQIDs
DFTIM	Makes image of DFT at arbitrary point showing time vs frequency
DFTPL	plots DFT of a UV data set at arbitrary point versus time
DGAUS	Correct UV model for convolution by Clean beam
DIFRL	divides the RR data by LL data
DIFUV	Outputs the difference of two matching input uv data sets
DOACOR	specifies whether autocorrelation data are included
DOARRAY	spcifies if subarrays are ignored or the information used
DOBTWEEN	Controls smoothing between sources in calibration tables
DOCONCAT	selects concatenated or indivudual output files
DOEBAR	Controls display of estimates of the uncertainty in the data
DOIFS	controls functions done across IFs
DOREAL	Say to do operation with real/imaginary rather than amplitude/phase
DOROBUST	Controls method of averaging - simple mean/rms or robust
DOSTOKES	selects options related to polarizations
DOUVCOMP	selects use of compression in writing UV data to disk
DQUAL	Rearranges source list, dropping qualifiers
DSORC	copies a data set elliminating some source numbers
DSTOK	Drops the cross-hand polarizations

DT2PD	Write PD table from a PD table text file
DTCHK	Task to check results of a test using simulated data.
DTSUM	Task to provide a summary of the contents of a dataset
EDITA	Interactive TV task to edit uv data based on TY/SY/SN/CL tables
EDITR	Interactive baseline-oriented visibility editor using the TV
EIF	last IF (spectral window) number to be included in operation
ELFIT	Plots/fits selected contents of SN, TY, SY, PC or CL files
EVACL	Evaluates statistics in closure phase and amplitude
EVASN	Evaluates statistics in SN/CL tables
EVAUV	Subtracts & divides a model into UV data, does statistics on results
EVLA	puts the list of eVLA antennas in the current file on stack
FEW	procedure to TELL FILLM to append incoming data to existing uv files
FGCNT	Counts samples comparing two flag tables or detailed count from ¡= 1
FGDIF	Compares affect of 2 FG tables
FGPLT	Plots selected contents of FG table
FGPRT	Prints counts of selected portions of an FG table.
FGSPW	Flags bad spectral windows
FGTAB	writes frequency-range flags to a text file to be read by UVFLG
FILLM	reads VLA on-line/archive format uv data tapes (post Jan 88)
FILLR	reads old VLA on-line-system tapes into AIPS
FINDR	Find normal values for a uv data set
FITAB	writes images / uv data w extensions to tape in FITS format
FITDISK	writes images / uv data w extensions to disk in FITS format
FITTP	writes images / uv data w extensions to tape in FITS format
FIXAL	least squares fit aliasing function and remove
FIXAN	fixes the contents of the ANtenna extension file
FIXFR	Modifies UV data set making all frequencies increase or decrease
FIXRL	correctes right vs left polarizations for a list of antennas
FIXWT	Modify weights to reflect amplitude scatter of data
FLAGR	Edit data based on internal RMS, amplitudes, weights
FLGIT	flags data based on the rms of the spectrum
FLOPM	reverses the spectral order of UV data, can fix VLA error
FOV	Specifies the field of view
FQCENTER	specifies that the frequency axis should be centered
FREQSEL	List of frequencies desired
FRMAP	Task to build a map using fringe rate spectra
FRPLT	Task to plot fringe rate spectra
FTFLG	interactive flagging of UV data in channel-time using the TV
FUDGE	modifies UV data with user's algorithm: paraform task
FXALIAS	least squares fit aliasing function and remove
FXPOL	Corrects VLBA polarization assignments
FXTIM	fixes start date so all times are positive
FXVLA	Task to correct VLA data for on-line errors in special cases.
FXVLB	Builds a CQ table to enable VLBA correlator loss corrections
GCPLT	Plots gain curves from text files
GETITIME	Verb to return the UV data integration time.
HA2TI	Converts data processed by TI2HA (STUFFER) back to real times
HAFIX	Recomputes u,v,w when time is hour angle (UVdata is output of TI2HA)
HLPEDIBP	Interactive BP table uv-data editor BPEDT - run-time help
HLPEDICL	Interactive SN/CL table uv-data editor - run-time help
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPEDISN	Interactive SN/CL table (not UV) editor - run-time help
HLPEDISS	Interactive SY table (not UV) editor - run-time help
HLPEDISY	Interactive SY table uv-data editor EDITA - run-time help
HLPEDITS	Interactive TY table (not UV) editor - run-time help
HLPEDITY	Interactive TY table uv-data editor EDITA - run-time help
HLPEDIUV	Interactive uv-data editor EDITR - run-time help
HLPFTFLG	Interactive time-channel visibility Editor - run-time help

HLPIBLED	Interactive Baseline based visibility Editor - run-time help
HLPPCFLG	Interactive time-channel PC table Editor PCFLG - run-time help
HLPSPFLG	Interactive time-channel visibility Editor SPFLG - run-time help
HLPTVFLG	Interactive time-baseline visibility Editor TVFLG - run-time help
HLPUFLAG	Edit uv-data on a grid UFLAG - run-time help
HLPWIPER	edit uv data from UVPLT-like plot WIPER - run-time help
HOLGR	Read & process holography visibility data to telescope images
HOLIS	Prints information about holography sampling
HOLOG	Read & process holography visibility data to telescope images
HSA	puts the list of HSA antennas in the current file on stack
IBLED	Interactive BaseLine based visibility EDitor
IM2UV	converts an image to a visibility data set
IMFRING	large image delay fitting with IM2CC and OOFRING
IMSCAL	large image self-cal with IM2CC and OOCAL
INTTIME	adds user-generated lines to the history extension file
LISTR	prints contents of UV data sets and assoc. calibration tables
LISUN	prints contents of UV data sets with Sun angles
LOCIT	fits antenna locations from SN-table data
LPCAL	Determines instrumental polarization for UV data
M3TAR	translate Haystack MKIII VLBI format "A" TAR's into AIPS
MANY	procedure to TELL FILLM to start new uv files on each scan
MAPBM	Map VLA beam polarization
MATCH	changes antenna, source, FQ numbers to match a data set
MK3IN	translate Haystack MKIII VLBI format "A" tapes into AIPS
MOD3D	Computes a 3D CC model from a set of facets
MORIF	Combines IFs or breaks spectral windows into multiple windows (IFs)
MSORT	Sort a UV dataset into a specified order
MULIF	Change number of IFs in output
MULTI	Task to convert single-source to multi-source UV data
NANS	reads an image or a UV data set and looks for NaNs
NCHAN	Number of spectral channels in each spectral window
NIF	Number of IFs (spectral windows) in a data set
NOIFS	makes all IFs into single spectrum
NPIECE	The number of pieces to make
NSKIP	Number of objects to skip
OBJECT	The name of an object
OBPLT	Plot columns of an OB table.
OFUDG	modifies UV data with user's algorithm no cal adverbs: paraform task
OMFIT	Fits sources and, optionally, a self-cal model to uv data
OOCAL	determines antenna complex gain with frequency-dependent models
OOSRT	Sort a UV dataset into a specified order
OOSUB	Subtracts/divides a model from/into a uv data base
OTFMODE	Specifies whether the data are in on-the-fly mode or not
PCAL	Determines instrumental polarization for UV data
PCASS	Finds amplitude bandpass shape from pulse-cal table data
PCCOR	Corrects phases using PCAL tones data from PC table
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFIT	Finds delays and phases using a pulse-cal (PC) table
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PCPLT	Plots pulse-cal tables in 2 dimensions as function of time
PCVEL	shifts spectral-line UV data to a given velocity: planet version
PDEDT	Interactive TV task to edit polarization D-term (PD) tables
PDPLT	Plots selected contents of PD tables
PEELR	calibrates interfering sources in multi-facet imges
PHASE	Baseline Phase coherence measurement
PHNEG	Negates a UV datafile's visibility phase.
PHSLIMIT	gives a phase value in degrees
PHSRF	Perform phase-referencing within a spectral line database.
PLOTC	Plots color schems used by 3-color plot tasks

PLRFI	Plots spectral statistics from output of VBRFI & VLBRF
POSSM	Task to plot total and cross-power spectra.
PPAPP	Applies Right minus Left phase difference to a 2nd data set
PRRFI	Prints excess spectral statistics from output of VBRFI & VLBRF
PRTAN	prints the contents of the ANtenna extension file
PRTUV	prints contents of a visibility (UV) data set
QCREATE	adverb controlling the way large files are created
QUACK	Flags beginning or end portions of UV-data scans
QUAL	Source qualifier
QUFIX	determines Right minus Left phase difference, corrects cal files
QUIT	procedure to TELL FILLM to stop at the end of the current scan
QUOUT	writes text file of Q, U versus frequency to be used by RLDIF
READISK	Reads images / uv data w extensions in FITS format into AIPS
REAMP	Scale visibility amplitudes by IF- or subarray-dependent factor
REFDATE	To specify the initial or reference date of a data set
REFLG	Attempts to compress a flag table
REIFS	Breaks spectral windows into multiple spectral windows (IFs)
RESEQ	Renumber antennas
REWAY	computes weights based in rms in spectra
REWEIGHT	Reweighting factors for UV data weights.
REWGT	modifies UV data re-scaling the weights only
RFLAG	Flags data set based on time and freq rms in fringe visibilities
RIRMS	computes rms of real/imag of a selected subset of a uv data set
RLCAL	Determines instrumental right-left phase versus time (a self-cal)
RLCOR	corrects a data set for R-L phase differences
RLDIF	determines Right minus Left phase difference, corrects cal files
ROBUST	Uniform weighting ”robustness” parameter
SBCOR	Task to correct VLBA data for phase shift between USB & LSB
SDLSF	least squares fit to channels and subtracts from SD uv data
SDMOD	modifies single-dish UV data with model sources
SDVEL	shifts spectral-line single-dish data to a given velocity
SETAN	Reads an ANtenna file info from a text file
SHADO	Calculate the shadowing of antennas at the array
SHAHO	Flags Holography data for shadowing
SHOUV	displays uv data in various ways.
SMOOTH	Specifies spectral smoothing
SNBLP	Plots selected contents of SN or CL files on a baseline basis
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
SNFIT	Fits parabola to SN amplitudes and plots result
SNFLG	Writes flagging info based on the contents of SN files
SNIFS	Plots selected contents of SN, TY, SY, PC or CL files by IF
SNPLT	Plots selected contents of SN, SY, TY, PC or CL files versus time
SNREF	Chooses best reference antenna to minimize R-L differences
SNRMS	Print statistics for selected contents of SN, SY, TY, PC or CL files
SORT	Specified desired sort order
SOUSP	fits source spectral index from SU table or adverbs
SPCAL	Determines instrumental polzn. for spec. line UV data
SPECR	Spectral regridding task for UV data
SPFLG	interactive flagging of UV data in channel-TB using the TV
SPLAT	Applies calibration and splits or assemble selected sources.
SPLIT	converts multi-source to single-source UV files w calibration
SPMOD	Modify UV database by adding a model with spectral lines
SPRMS	Plots spectral statistics of a selected subset of a uv data set
STOKES	Stokes parameter
STOP	procedure to TELL FILLM to break all current uv files and stop
STUFFR	averages together data sets in hour angle
SUFIX	modifies source numbers on uv data
SWAPR	modifies UV data by swapping real and imaginary parts
SWPOL	Swap polarizations in a UV data base

SYFIX	modifies OTF SY DATA to match the source numbers in the data set
SYVSN	Plots selected SY/TY data with SN solution values versus time
TBAVG	Time averages data combining all baselines.
TELFLM	procedure to TELL real-time FILLM a new APARM(1) value
TEPLT	Plots selected contents of TE (TECOR) parameter tables
TFILE	sorts and edits MkIII correlator UNIX-based A-file.
TI2HA	modifies times in UV data to hour angles
TIORD	checks data for time baseline ordering, displays failures
TLCAL	Converts JVLA telcal files to an SN file
TRUEP	determines true antenna polarization from special data sets
TVFLG	interactive flagging of UV data using the TV
U2CAT	list a user's UV and scratch files on disk IN2DISK
U3CAT	list a user's UV and scratch files on disk IN3DISK
U4CAT	list a user's UV and scratch files on disk IN4DISK
U5CAT	list a user's UV and scratch files on disk IN5DISK
UBAVG	Baseline dependent time averaging of uv data
UCAT	list a user's UV and scratch files on disk INDISK
UFLAG	Plots and edits data using a uv-plane grid and the TV
UJOIN	modifies UV data converting IFs to spectral channels
UOCAT	list a user's UV and scratch files on disk OUTDISK
USUBA	Assign subarrays within a uv-data file
UV1TYPE	Convolving function type 1, pillbox or square wave
UV2MS	Append single-source file to multi-source file.
UV2TB	Converts UV autocorrelation spectra to tables
UV2TYPE	Convolving function type 2, exponential function
UV3TYPE	Convolving function type 3, sinc function
UV4TYPE	Convolving function type 4, exponent times sinc function
UV5TYPE	Convolving function type 5, spheroidal function
UV6TYPE	Convolving function type 6, exponent times BessJ1(x) / x
UVADC	Fourier transforms and corrects a model and adds to uv data.
UVADD	Combines two matching uv data sets
UVAVG	Average or merge a sorted (BT, TB) uv database
UVBAS	averages several channels and subtracts from uv data.
UVBOX	radius of the smoothing box used for uniform weighting
UVBXFN	type of function used when counting for uniform weighting
UVCMP	Convert a UV database to or from compressed format
UVCON	Generate sample UV coverage given a user defined array layout
UVCOP	Task to copy a subset of a UV data file
UVCOPPRM	Parameter adverb array for task UVCOP
UVCRS	Finds the crossing points of UV-ellipses.
UVDEC	Decrements the number of spectral channels, keeping every nth
UVDGP	Copy a UV data file, deleting a portion of it
UVDI1	Subtract UV data(averaged up to one time) from the other UV data
UVDIF	prints differences between two UV data sets
UVFIL	Create, fill a uv database from user supplied information
UVFIT	Fits source models to uv data.
UVFIX	Recomputes u,v,w for a uv database
UVFIXPRM	Parameter adverb array for task UVFIX
UVFLG	Flags UV-data
UVFND	prints selected data from UV data set to search for problems
UVFRE	Makes one data set have the spectral structure of another
UVGIT	Fits source models to uv data.
UVGLU	Glues UV data frequency blocks back together
UVHGM	Plots statistics of uv data files as histogram.
UVHIM	Makes image of the histogram on two user-chosen axes
UVHOL	Prints holography data from a UV data base with calibration
UVIMG	Grid UV data into an "image"
UVLIN	Fits and removes continuum visibility spectrum, also can flag
UVLOD	Read export or FITS data from a tape or disk

UVLSD	least squares fit to channels and divides the uv data.
UVLSF	least squares fit to channels and subtracts from uv data.
UVMLN	edits data based on the rms of the spectrum
UVMOD	Modify UV database by adding a model incl spectral index
UVMTH	Averages one data set and applied it to another.
UVNOU	flags uv samples near the U,V axes to reduce interference
UVPLT	Plots data from a UV data base in multiple ways
UVPOL	modifies UV data to make complex image and beam
UVPRM	measures parameters from a UV data base
UVPRT	prints data from a UV data base with calibration
UVRANGE	Specify range of projected baselines
UVRFI	Mitigate RFI by Fourier transform or fitting the circle
UVRMS	computes statistics of a selected subset of a uv data set
UVSEN	Determine RMS sidelobe level and brightness sensitivity
UVSIM	Generate sample UV coverage given a user defined array layout
UVSIZE	specifies number of pixels on X and Y axes of a UV image
UVSRT	Sort a UV dataset into a specified order
UVSUB	Subtracts/divides a model from/into a uv data base
UVTAPER	Widths in U and V of gaussian weighting taper function
UVWAX	flags uv samples near the U,V axes to reduce interference
UVWTFN	Specify weighting function, Uniform or Natural
VBGLU	Glues together data from multiple passes thru the VLBA corr.
VBRFI	Plots spectral statistics of VLBA autocorrelation data for RFI
VECTOR	selects method of averaging UV data
VH2RL	Converts from linear to circular polarization and vice versa
VHDIF	find/apply V minus H linear polarization phase difference
VHMOD	Compute linear polarization point source model, applies to data
VLA	puts the list of VLA antennas in the current file on stack
VLBA	puts the list of VLBA antennas in the current file on stack
VLBIN	Task to read VLBI data from an NRAO/MPI MkII correlator
VLBRF	Plots spectral statistics of VLBA autocorrelation data for RFI
VPFLG	Resets flagging to all or all corss-hand whenever some are flagged
VPLOT	Plots uv data and model from CC file
VTEST	Measures velocity discrepancy across fields
WEIGHTIT	Controls modification of weights before gain/fringe solutions
WETHR	Plots selected contents of WX tables, flags data based on WX
WIPER	plots and edits data from a UV data base using the TV
WRTDISK	writes images / uv data w extensions to disk in FITS format
WRTPROCS	Procedures to simplify the reduction of VLBA data
WTMOD	modifies weights in a UV data set
WTUV	Specifies the weight to use for UV data outside UVRANGE
XYDIF	find/apply X minus Y linear polarization phase difference
XYMOD	Compute linear polarization point source model, applies to data
XYPHASE	X-Y phase differences
ZEROSP	Specify how to include zero spacing fluxes in FT of UV data

13.40 VERB

```
VERB
Type:  General type of POPS symbol
Use:   Verbs are the magic words which cause FORTRAN code to
       execute some function.  They are compiled into AIPS
       by the programmers and their meaning remains fixed
       at least until the programmers change their minds.
Grammar:   Verbs may be given either in compile mode or in
       regular execute mode.  In the former, their pointers
       are stored with the procedure and they are executed
       when the procedure is invoked.  In the latter, they
       are compiled with the other statements and parameters
       on the input line and then executed before a new
       input line is read.
Execution:  Verbs are executed when the line in which they
       appear is executed and are simply referenced by their
       name.  The syntax "GO verb_name" is converted by AIPS to
       "TPUT verb_name ; verb_name" which saves the adverbs of
       "verb_name" for a later TGET and then executes
       "verb_name".  The syntax "TASK = 'verb_name' ; GO" will
       not work.
****************************************************************
```

ABOUT	displays lists and information on tasks, verbs, adverbs
ABS	returns absolute value of argument
ACOS	Returns arc cosine of argument (half-circle)
ACTNOISE	puts estimate of actual image uncertainty and zero in header
ADDBEAM	Inserts clean beam parameters in image header
ADDDISK	makes a computer's disks available to the current AIPS session
ALLDEST	Delete a group or all of a users data files
ALTDEF	Sets frequency vs velocity relationship into image header
ALTSWTCH	Switches between frequency and velocity in image header
APROPOS	displays all help 1-line summaries containing specified words
ASIN	Returns arc sine of argument (half-circle)
ATAN	Returns arc tangent of argument (half-circle)
ATAN2	Returns arc tangent of two arguments (full circle)
AVEOT	Advances tape to end-of-information point
AVFILE	Moves tape forward or back to end-of-file marks
AVMAP	Advance tape by one image (IBM-CV = obsolete tape file)
AXDEFINE	Define or modify an image axis description
BAMODIFY	edits characters in a line of a batch work file
BATCH	starts entry of commands into batch-job work file
BATCLEAR	removes all text from a batch work file
BATEDIT	starts an edit (replace, insert) session on a batch work file
BATLIST	lists the contents of a batch work file
BDF2AIPS	Read EVLA ASDM/BDF data into AIPS
BDFLIST	List contents of EVLA ASD data file
BY	gives increment to use in FOR loops in POPS language
CALDIR	lists calibrator source models available as AIPS FITS files
CATALOG	list one or more entries in the user's data directory
CEIL	returns smallest integer greater than or equal the argument
CELGAL	switches header between celestial and galactic coordinates
CHAR	converts number to character string
CHARMULT	Changes the multiplication factor for TV characters
CHKNAME	Checks for existence of the specified image name
CLR2NAME	clears adverbs specifying the second input image
CLR3NAME	clears adverbs specifying the third input image

CLR4NAME	clears adverbs specifying the fourth input image
CLR5NAME	clears adverbs specifying the fifth input image
CLRMSG	deletes messages from the user's message file
CLRNAME	clears adverbs specifying the first input image
CLRONAME	clears adverbs specifying the first output image
CLRSTAT	remove any read or write status flags on a directory entry
CLRTEMP	clears the temporary literal area during a procedure
CODECIML	Convert between decimal and sexagesimal coordinate values
COODEFIN	Define or modify an image axis coordinate description
COPIXEL	Convert between physical and pixel coordinate values
COS	returns cosine of the argument in degrees
COSTAR	Verb to plot a symbol at given position on top of a TV image
COWINDOW	Set a window based on coordinates
CPUTIME	displays curren tcpu and real time usage of the AIPS task
CURBLINK	switch TV cursor between steady and blinking displays
CURVALUE	displays image intensities selected via the TV cursor
DAYNUMBR	finds day nuumber of an image or uv data set
DEFAULT	Verb-like sets adverbs for a task or verb to initial values
DELAY	Verb to pause AIPS for DETIME seconds
DELBOX	Verb to delete boxes with TV cursor & graphics display.
DFILEBOX	Verb to delete Clean boxes with TV cursor & write to file
DISMOUNT	disables a magnetic tape and dismounts it from the tape drive
DOCC	Adverb to control application to Clean component files
DOWNCASE	Convert a string to all lower case letters
DRAWBOX	Verb to draw Clean boxes on the display
DUMP	displays portions of the POPS symbol table in all formats
EGETHEAD	returns parameter value from image header and error code
EGETNAME	fills in input name adverbs by catalog slot number, w error
EHEX	converts decimal to extended hex
END	marks end of block (FOR, WHILE, IF) of POPS code
EPOCONV	Convert between J2000 and B1950 coordinates
EPOSWTCH	Switches between B1950 and J2000 coordinates in header
EVLA	puts the list of eVLA antennas in the current file on stack
EXIT	ends an AIPS batch or interactive session
EXP	returns the exponential of the argument
EXPLAIN	displays help + extended information describing a task/symbol
EXTDEST	deletes one or more extension files
EXTLIST	lists detailed information about contents of extension files
FILEBOX	Verb to reset Clean boxes with TV cursor & write to file
FILEZAP	Delete an external file
FLOOR	returns largest integer ¡= argument
FOR	starts an iterative sequence of operations in POPS language
FREESPAC	displays available disk space for AIPS in local system
GAMMASET	changes the gamma-correction exponent used in the TV OFM
GET2NAME	fills 2nd input image name parameters by catalog slot number
GET3NAME	fills 3rd input image name parameters by catalog slot number
GET4NAME	fills 4th input image name parameters by catalog slot number
GET5NAME	fills 5th input image name parameters by catalog slot number
GETDATE	Convert the current date and time to a string
GETHEAD	returns parameter value from image header
GETITIME	Verb to return the UV data integration time.
GETNAME	fills 1st input image name parameters by catalog slot number
GETONAME	fills 1st output image name parameters by catalog slot number
GETPOPSN	Verb to return the pops number on the stack
GETTHEAD	Returns keyword values from a table header, also column #, # rows
GETVERS	finds maximum version number of an extension file
GO	starts a task, detaching it from AIPS or AIPSB
GRBLINK	Verb which blinks 2 TV graphics planes
GRCLEAR	clears the contents of the specified TV graphics channels

GRDROP	deletes the specified gripe entry
GREAD	reads the colors of the specified TV graphics channel
GRINDEX	lists users and time of all gripe entries
GRIPE	enter a suggestion or bug report for the AIPS programmers
GRLIST	lists contents of specified gripe entry
GROFF	turns off specified TV graphics channelS
GRON	turns on specified TV graphics channelS
GWRITE	Sets the colors of the specified TV graphics channel
HELP	displays information on tasks, verbs, adverbs
HINOTE	adds user-generated lines to the history extension file
HITEXT	writes lines from history extension file to text file
HSA	puts the list of HSA antennas in the current file on stack
HUEWEDGE	Show a wedge on the TV suitable for TVHUEINT displays
IM2HEAD	displays the image 2 header contents to terminal, message file
IM2TV	Verb to convert pixel coordinates to TV pixels
IM3HEAD	displays the image 3 header contents to terminal, message file
IM4HEAD	displays the image 4 header contents to terminal, message file
IM5HEAD	displays the image 5 header contents to terminal, message file
IMCENTER	returns pixel position of sub-image centroid
IMDIST	determines spherical distance between two pixels
IMERASE	replaces an image portion of the TV screen with zeros
IMHEADER	displays the image header contents to terminal, message file
IMOHEAD	displays the output image header contents
IMPOS	displays celestial coordinates selected by the TV cursor
IMSTAT	Returns statistics of a sub-image
IMVAL	returns image intensity and coordinate at specified pixel
IMWEDGE	load step wedge of full range of image values to TV
IMXY	returns pixel coordinates selected by the TV cursor
INP	displays adverb values for task, verb, or proc - quick form
INPUTS	displays adverb values for task, verb, or proc - to msg file
JOBLIST	lists contents of a submitted and pending batch job
KLEENEX	ends an AIPS interactive session wiping the slate klean
LENGTH	returns length of string to last non-blank character
LN	returns the natural logarithm of the argument
LOG	returns the base-10 logarithm of the argument
M2CAT	displays images in the user's catalog directory for IN2DISK
M3CAT	displays images in the user's catalog directory for IN3DISK
M4CAT	displays images in the user's catalog directory for IN4DISK
M5CAT	displays images in the user's catalog directory for IN5DISK
MAX	returns the maximum of its two arguments
MAXFIT	returns pixel position and image intensity at a maximum
MCAT	lists images in the user's catalog directory on disk INDISK
MFITSET	gets adverbs for running IMFIT and JMFIT
MIN	returns the minimum of its two arguments
MOCAT	displays images in the user's catalog directory for OUTDISK
MOD	returns remainder after division of 1st argument by 2nd
MODULUS	returns square root of sum of squares of its two arguments
MOUNT	makes a tape drive available to user's AIPS and tasks
NAMEGET	fills 1st input image name parameters by default matching
OBITIMAG	Access to OBIT task Imager without self-cal or peeling
OBITMAP	Simplified access to OBIT task Imager
OBITPEEL	Access to OBIT task Imager with self-cal and peeling
OBITSCAL	Access to OBIT task Imager with self-cal, NOT peeling
OFFPSEUD	Verb which deactivates all pseudo-color displays
OFFSCROL	Verb which deactivates scroll of an image
OFFTRAN	Verb which restores transfer function to normal
OFFZOOM	Verb which returns the hardware IIS zoom to normal
OFMADJUS	interactive linear adjustment of current TV OFM lookup tables
OFMCONT	creates/modifies TV color OFMs with level or wedged contours

OFMDIR	lists names of the user's and system's OFM files from OFMFIL
OFMGET	loads TV OFMS from an OFM save file
OFMLIST	lists the current TV OFM table(s) on the terminal or printer
OFMSAVE	saves the TV's current OFM lookup table in a text file
OFMTWEAK	interactive modification of current TV OFM lookup tables
OFMZAP	deletes an OFM lookup table save file
OUTPUTS	displays adverb values returned from task, verb, or proc
PARALLEL	Verb to set or show degree of parallelism
PASSWORD	Verb to change the current password for the login user
PCAT	Verb to list entries in the user's catalog (no log file).
PLGET	gets the adverbs used to make a particular plot file
PRINT	Print the value of an expression
PRINTER	Verb to set or show the printer(s) used
PROC	Define a POPS procedure using procedure editor.
PROCEDUR	Define a POPS procedure using procedure editor
PRTHI	prints selected contents of the history extension file
PRTMSG	prints selected contents of the user's message file
PSEUDOVB	Declares a name to be a symbol of type pseudoverb
PUTHEAD	Verb to modify image header parameters.
PUTTHEAD	inserts a given value into a table keyword/value pair
PUTVALUE	Verb to store a pixel value at specified position
Q2HEADER	Verb to summarize the image 2 header: positions at center
Q3HEADER	Verb to summarize the image 3 header: positions at center
Q4HEADER	Verb to summarize the image 4 header: positions at center
Q5HEADER	Verb to summarize the image 5 header: positions at center
QGETVERS	finds maximum version number of an extension file quietly
QHEADER	Verb to summarize the image header: positions at center
QIMVAL	returns image intensity and coordinate at specified pixel
QINP	displays adverb values for task, verb, or proc - restart form
QOHEADER	Verb to summarize the output image header: center positions
QUEUES	Verb to list all submitted jobs in the job queue
RANDOM	Compute a random number from 0 to 1
READ	Read a value from the users terminal
REBOX	Verb to reset boxes with TV cursor & graphics display.
RECAT	Verb to compress the entries in a catalog file
REHEX	converts extended hex string to decimal
REMDISK	removes a computer's disks from the current AIPS session
REMOVIE	Verb to rerun a previously loaded (TVMOVIE) movie
RENAME	Rename a file (UV or Image)
RENUMBER	Verb to change the catalog number of an image.
REROAM	Verb to use previous roam image mode, then does roam
RESCALE	Verb to modify image scale factor and offset
RESTART	Verb to trim the message log file and restart AIPS
RESTORE	Read POPS memory file from a common area.
RETURN	Exit a procedure allowing a higher level proc to continue.
REVERSN	checks disk for presence of extension files
REWIND	Verb to rewind a tape
ROAM	Roam around an image too large for the display.
ROAMOFF	Verb to recover image from roam display in simple display mode
RUN	Pseudoverb to read an external RUN files into AIPS.
SAVDEST	Verb to destroy all save files of a user.
SAVE	Pseudoverb to save full POPS environment in named file
SCALAR	Declares a variable to be a scalar in a procedure
SCAT	lists scratch files in the user's catalog directory on all disks
SCRATCH	delete a procedure from the symbol table.
SCRDEST	Verb to destroy scratch files left by bombed tasks.
SETDEBUG	Verb to set the debug print and execution level
SETMAXAP	Examines/alters system parameter limiting dynamic pseudo-AP
SETSLICE	Set slice endpoints on the TV interactively

SG2RUN	Verb copies the K area to a text file suitable for RUN
SGDESTR	Verb-like to destroy named POPS environment save file
SGINDEX	Verb lists SAVE areas by name and time of last SAVE.
SGUGET	Gets another user's SAVE/GET file.
SGUINDEX	Verb lists SAVE areas by name and time of last SAVE another user
SHOW	Verblike to display the TELL adverbs of a task.
SIN	Compute the sine of a value
SIZEFILE	return file size plus estimate of IMAGR work file size
SPY	Verb to determine the execution status of all AIPS tasks
SQRT	Square root function
STALIN	revises history by deleting lines from history extension file
STARTTV	Restarts XAS (TV), MS, TK servers that have disappered
STQUEUE	Verb to list pending TELL operations
STRING	Declare a symbol to be a string variable in POPS
SUBMIT	Verb which submits a batch work file to the job queue
SUBSTR	Function verb to specify a portion of a STRING variable
SYSTEM	Verb to send a command to the operating system
T1VERB	Temporary verb for testing (also T2VERB...T9VERB)
TABGET	returns table entry for specified row, column and subscript.
TABPUT	replaces table entry for specified row, column and subscript.
TAN	Tangent function
TAPES	Verb to show the TAPES(s) available
TGET	Verb-like gets adverbs from last GO of a task
TGINDEX	Verb lists those tasks for which TGET will work.
TGUINDEX	Verb lists those tasks for which TUGET will work another user
THEN	Specified the action if an IF test is true
TK1SET	Verb to reset 1D gaussian fitting initial guess.
TKAGUESS	Verb to add a plot of the slice model guess directly on TEK
TKAMODEL	Verb to add slice model display directly on TEK
TKARESID	Verb to add slice model residuals directly on TEK
TKASLICE	Verb to add a slice display on TEK from slice file
TKERASE	Erase the graphics screen or window
TKGUESS	Verb to display slice model guess directly on TEK
TKMODEL	Verb to display slice model directly on TEK
TKPOS	Read a position from the graphics screen or window
TKRESID	Verb to display slice model residuals directly on TEK
TKSET	Verb to set 1D gaussian fitting initial guesses.
TKSLICE	Verb to display slice file directly on TEK
TKVAL	Verb to obtain value under cursor from a slice
TKXY	Verb to obtain pixel value under cursor
TO	Specifies upper limit of a FOR loop
TPHEAD	Verb to list image header from FITS or IBM-CV tape
TPUT	Verb-like puts adverbs from a task in file for TGETs
TUGET	Verb-like gets adverbs from last GO of a task from another user #
TV1SET	Verb to reset 1D gaussian fitting initial guess on TV plot.
TV2COLOR	Verb to activate a 2-color pseudo-color display on the TV
TV3COLOR	Verb to initiate 3-color display using 3 TV channels
TVACOMPS	Verb to add slice model components directly on TV graphics
TVAGUESS	Verb to re-plot slice model guess directly on TV graphics
TVAMODEL	Verb to add slice model display directly on TV graphics
TVANOT	Verb to load anotation to the TV image or graphics
TVARESID	Verb to add slice model residuals directly on TV graphics
TVASLICE	Verb to add a slice display on TV graphics from slice file
TVBANDW	Verb to activate three types of black and white TV enhancements
TVBLINK	Verb which blinks 2 TV planes, can do enhancement also
TVBOX	Verb to set boxes with TV cursor & graphics display.
TVCLEAR	Verb to clear image from TV channel(s)
TVCOMPS	Verb to display slice model components directly on TV graphics
TVCUBE	Verb to load a cube into tv channel(s) & run a movie

TVDATA	displays information about the current TV display
TVFACTS	displays information about the current TV display
TVFIDDLE	Verb enhances B/W or color TV image with zooms
TVGUESS	Verb to display slice model guess directly on TV graphics
TVHELIX	Verb to activate a helical hue-intensity TV pseudo-coloring
TVHUEINT	Verb to make hue/intensity display from 2 TV channels
TVILINE	Verb to draw a straight line on an image on the TV
TVINIT	Verb to return TV display to a virgin state
TVLABEL	Verb to label the (map) image on the TV
TVLAYOUT	Verb to label the holography image on the TV with panel layout
TVLINE	Verb to load a straight line to the TV image or graphics
TVLOD	Verb to load an image into a TV channel
TVLUT	Verb which modifies the transfer function of the image
TVMBLINK	Verb which blinks 2 TV planes either auto or manually
TVMLUT	Verb which modifies the transfer function of the image
TVMODEL	Verb to display slice model directly on TV graphics
TVMOVIE	Verb to load a cube into tv channel(s) & run a movie
TVNAME	Verb to fill image name of that under cursor
TVOFF	Verb which turns off TV channel(s).
TVON	Turns on one or all TV image planes
TVPHLAME	Verb to activate "flame-like" pseudo-color displays
TVPOS	Read a TV screen position using cursor
TVPSEUDO	Verb to activate three types of pseudo-color displays
TVRESID	Verb to display slice model residuals directly on TV graphics
TVRESTOR	Restarts XAS (TV), MS, TK servers that have disappered
TVROAM	Load up to 16 TV image planes and roam a subset thereof
TVSCROL	Shift position of image on the TV screen
TVSET	Verb to set slice Gaussian fitting initial guesses from TV plot
TVSLICE	Verb to display slice file directly on TV
TVSPLIT	Compare two TV image planes, showing halves
TVSTAR	Verb to plot star positions on top of a TV image
TVSTAT	Find the mean and RMS in a blotch region on the TV
TVTRANSF	Interactively alters the TV image plane transfer function
TVWEDGE	Show a linear wedge on the TV
TVWINDOW	Set a window on the TV with the cursor
TVWLABEL	Put a label on the wedge that you just put on the TV
TVZOOM	Activate the TV zoom
TYPE	Type the value of an expression
U2CAT	list a user's UV and scratch files on disk IN2DISK
U3CAT	list a user's UV and scratch files on disk IN3DISK
U4CAT	list a user's UV and scratch files on disk IN4DISK
U5CAT	list a user's UV and scratch files on disk IN5DISK
UCAT	list a user's UV and scratch files on disk INDISK
UNQUE	remove a given job from the job queue
UOCAT	list a user's UV and scratch files on disk OUTDISK
UPCASE	Convert a string to all upper case letters
USAVE	Pseudoverb to save full POPS environment in named file
VALUE	Convert a string to a numeric value
VERB	Declares a name to be a symbol of type verb
VGET	Verb-like gets adverbs from version task parameter save area
VGINDEX	Verb lists those tasks for which VGET will work.
VLA	puts the list of VLA antennas in the current file on stack
VLBA	puts the list of VLBA antennas in the current file on stack
VPUT	Verb-like puts adverbs from a task in files for VGETs
WAITTASK	halt AIPS until specified task is finished
WEDERASE	Load a wedge portion of the TV with zeros
XHELP	Accesses hypertext help system
ZAP	Delete a catalog entry and its extension files

13.41 VLA

ALBUS	Calculate ionospheric delay and Faraday rotation using ALBUS
APGPS	Apply GPS-derived ionospheric corrections
ASDMFILE	Full path to EVLA ASDM/BDF directory
BDF2AIPS	Read EVLA ASDM/BDF data into AIPS
BDFLIST	List contents of EVLA ASD data file
BPWAY	Determines channel-dependent relative weights
BREAK	procedure to TELL FILLM to break all current uv files, start new
CALDIR	lists calibrator source models available as AIPS FITS files
CALIN	specifies name of input disk file usually with calibration data
CLCOR	applies user-selected corrections to the calibration CL table
CONFIG	Configuration ID number within an EVLA ASDM/BDF data set
CVEL	shifts spectral-line UV data to a given velocity
DAYFX	Fixes day number problems left by FILLM
DFCOR	Applies ATMO differential corrections to the calibration CL table
DOOSRO	calibrating amplitude and phase, and imaging VLA data
DOVLAMP	Produces amp calibration file for phased-VLA VLBI data
FARAD	add ionospheric Faraday rotation to CL table
FEW	procedure to TELL FILLM to append incoming data to existing uv files
FILLM	reads VLA on-line/archive format uv data tapes (post Jan 88)
FIXAL	least squares fit aliasing function and remove
FLOPM	reverses the spectral order of UV data, can fix VLA error
FRMAP	Task to build a map using fringe rate spectra
FXALIAS	least squares fit aliasing function and remove
GCPLT	Plots gain curves from text files
GPSDL	Calculate ionospheric delay and Faraday rotation corrections
LDGPS	load GPS data from an ASCII file
MANY	procedure to TELL FILLM to start new uv files on each scan
MAPBM	Map VLA beam polarization
MORIF	Combines IFs or breaks spectral windows into multiple windows (IFs)
NCHAN	Number of spectral channels in each spectral window
NIF	Number of IFs (spectral windows) in a data set
PANEL	Convert HOLOG output to panel adjustment table
PCVEL	shifts spectral-line UV data to a given velocity: planet version
PEEK	fits pointing model function to output from the VLA
PIPEAIPS	calibrating amplitude and phase, and imaging VLA data
PRTSY	Task to print statistics from the SY table
QUIT	procedure to TELL FILLM to stop at the end of the current scan
REIFS	Breaks spectral windows into multiple spectral windows (IFs)
REWAY	computes weights based in rms in spectra
RFLAG	Flags data set based on time and freq rms in fringe visibilities
STATIONS	GPS stations used by ALBUS from 3 Sept, 2024
STOP	procedure to TELL FILLM to break all current uv files and stop
SYPRT	Task to print values from the SY table
SYSOL	undoes and re-does nominal sensitivity application for Solar data
TECOR	Calculate ionospheric delay and Faraday rotation corrections
TELFLM	procedure to TELL real-time FILLM a new APARM(1) value
TLCAL	Converts JVLA telcal files to an SN file
TYAPL	undoes and re-does nominal sensitivity application
TYSMO	smooths and filters a calibration TY or SY table
USERLIST	Alphabetic and numeric list of VLA users, points to real list
VLABP	VLA antenna beam polarization correction for snapshot images
VLAMP	Makes ANTAB file for phased VLA used in VLBI observations
VLANT	applies VLA/EVLA antenna position corrections from OPs files
VLAPROCS	Procedures to simplify the reduction of VLBA data
VLARUN	Calibrating amplitude and phase, and imaging VLA data
VLATECR	Calculate ionospheric delay and Faraday rotation corrections

13.42 VLBI

ACCOR	Corrects cross amplitudes using auto correlation measurements
ACFIT	Determine antenna gains from autocorrelations
ACSCL	Corrects cross amplitudes using auto correlation measurements
AFILE	sorts and edits MkIII correlator A-file.
ALBUS	Calculate ionospheric delay and Faraday rotation using ALBUS
ALIAS	adverb to alias antenna numbers to one another
ANBPL	plots and prints uv data converted to antenna based values
ANCAL	Places antenna-based Tsys and gain corrections in CL table
ANTAB	Read amplitude calibration information into AIPS
ANTNAME	A list of antenna (station) names
APCAL	Apply TY and GC tables to generate an SN table
ASTROMET	Describes the process of astrometric/geodetic reduction in AIPS
BANDPOL	specifies polarizations of individual IFs
BLING	find residual rate and delay on individual baselines
BPASS5	Normalization control in BPASS for VLBARUN
BPSOLINT	Sets SOLINT in BPASS for VLBARUN
BSCAN	seeks best scan to use for phase cal, fringe search, ..
BSPRT	print BS tables
CALIN	specifies name of input disk file usually with calibration data
CALTASK	Controls which calibration task is used when by VLBARUN
CAPLT	plots closure amplitude and model from CC file
CHREFANT	Name of reference antenna
CL2HF	Convert CL table to HF table
CLCOR	applies user-selected corrections to the calibration CL table
CLOSE	plots closure phase or amplitude spectra averaged over closures
CLPLT	plots closure phase and model from CC file
CLVLB	Corrects CL table gains for pointing offsets in VLBI data
CRSFRING	Procedure to calibrate cross pol. delay and phase offsets
CVEL	shifts spectral-line UV data to a given velocity
CXPOLN	Procedure to make complex polarization images and beam
DFCOR	Applies ATMO differential corrections to the calibration CL table
DOCLIP	Controls whether and how a CLIP operation is performed
DOVLAMP	Produces amp calibration file for phased-VLA VLBI data
DTSIM	Generate fake UV data
EDITR	Interactive baseline-oriented visibility editor using the TV
ELEVLIM	Lower limit on elevation
EOPSFILE	Name of text file containing EOP information
FRING	fringe fit data to determine antenna calibration, delay, rate
FRMAP	Task to build a map using fringe rate spectra
FRPLT	Task to plot fringe rate spectra
FXAVG	Procedure to enable VLBA delay de-correlation corrections
FXPOL	Corrects VLBA polarization assignments
HF2SV	convert HF tables from FRING/MBDLY to form used by Calc/Solve
HFPRT	write HF tables from CL2HF
HLPEDIPC	Interactive PC table editor PCEDT - run-time help
HLPEDIPD	Interactive PD table editor PDEDT - run-time help
HLPIBLED	Interactive Baseline based visibility Editor - run-time help
HLPSCIMG	Full-featured image plus self-cal loops, editing - run-time help
HLPSCMAP	Imaging plus self-cal and editing SCMAP - run-time help
IANTB	Writes out GC and TY data in ANTAB format
IBLED	Interactive BaseLine based visibility EDitor
KRING	fringe fit data to determine antenna calibration, delay, rate
M3TAR	translate Haystack MKIII VLBI format "A" TAR's into AIPS
MATCH	changes antenna, source, FQ numbers to match a data set

MBDLY	Fits multiband delays from IF phases, updates SN table
MERGECAL	Procedure to merge calibration records after concatenation
MK3IN	translate Haystack MKIII VLBI format "A" tapes into AIPS
MK3TX	extract text files from a MKIII VLBI archive tape
OBPLT	Plot columns of an OB table.
OOFRING	Fringe fit data to determine calibration with spectral index options
PCABL	Copies the Cable cal values from PC table 1 to PC table n
PCASS	Finds amplitude bandpass shape from pulse-cal table data
PCAVG	Averages pulse-cal (PC) tables over time
PCCOR	Corrects phases using PCAL tones data from PC table
PCDIV	Scales pulse-cal amplitudes by Tsys or Psum
PCEDT	Interactive TV task to edit pulse-cal (PC) tables
PCFIT	Finds delays and phases using a pulse-cal (PC) table
PCFLG	interactive flagging of Pulse-cal data in channel-TB using the TV
PCHIS	Generates a histogram plot file from text input, e.g. from PCRMS
PCLOD	Reads ascii file containing pulse-cal info to PC table.
PCPLT	Plots pulse-cal tables in 2 dimensions as function of time
PCRMS	Finds statistics of a pulse-cal table; flags bad times and channels
PCVEL	shifts spectral-line UV data to a given velocity: planet version
PHSLIMIT	gives a phase value in degrees
PLRFI	Plots spectral statistics from output of VBRFI & VLBRF
PRRFI	Prints excess spectral statistics from output of VBRFI & VLBRF
RESEQ	Renumber antennas
RLDLY	fringe fit data to determine antenna R-L delay difference
SEARCH	Ordered list of antennas for fring searches
SELFCAL	Requests self-calibration of calibration sources
SMRATES	Requests smoothing and clipping of rates after FRING in pipeline
SNEDT	Interactive SN/CL/TY/SY table editor using the TV
STATIONS	GPS stations used by ALBUS from 3 Sept, 2024
TAU0	Opacities by antenna number
TECOR	Calculate ionospheric delay and Faraday rotation corrections
TFILE	sorts and edits MkIII correlator UNIX-based A-file.
TIME2	used by VLBAMPCL as the time range for a second calibrator scan
TIMETOL	used by MERGECAL to control accuracy when comparing times
TRECVR	Receiver temperatures by polarization and antenna
TYSMOLEV	Clip level to use in running TYSMO on a VLB TY table
UVPOL	modifies UV data to make complex image and beam
VBCAL	Scale visibility amplitudes by antenna based constants
VBGLU	Glues together data from multiple passes thru the VLBA corr.
VBMRG	Merge VLBI data, eliminate duplicate correlations
VBRFI	Plots spectral statistics of VLBA autocorrelation data for RFI
VLAMP	Makes ANTAB file for phased VLA used in VLBI observations
VLASUMM	Plots selected contents of SN or CL files
VLBAAMP	applies a-priori amplitude corrections to VLBA data
VLBAARCH	Procedure to archive VLBA correlator data
VLBACALA	applies a-priori amplitude corrections to VLBA data
VLBACCOR	applies a-priori amplitude corrections to VLBA data
VLBACRPL	Plots crosscorrelations
VLBAEOPS	Corrects Earth orientation parameters
VLBAFIX	Procedure that fixes VLBA data, if necessary
VLBAFPOL	Checks and corrects polarization labels for VLBA data
VLBAFQS	Copies different FQIDS to separate files
VLBAFRGP	Fringe fit phase referenced data and apply calibration
VLBAFRNG	Fringe fit data and apply calibration
VLBAKRGP	Fringe fit phase referenced data and apply calibration
VLBAKRNG	Fringe fit data and apply calibration
VLBALOAD	Loads VLBA data
VLBAMCAL	Merges redundant calibration data
VLBAMPCL	Calculates and applies manual instrumental phase calibration

`VLBAMPHC`	applies VLBARUN calibration to additional phase stopping centers
`VLBAPANG`	Corrects for parallactic angle
`VLBAPCOR`	Calculates and applies instrumental phase calibration
`VLBARFI`	Calibrates VLBA autocorrelations, writes out statistics
`VLBARUN`	applies amplitude and phase calibration procs to VLBA data
`VLBASNPL`	Plots selected contents of SN or CL files
`VLBASRT`	Sorts VLBA data, if necessary
`VLBASUBS`	looks for subarrays in VLBA data
`VLBASUMM`	Prints a summary of a VLBI experiment
`VLBATECR`	Calculate ionospheric delay and Faraday rotation corrections
`VLBAUTIL`	Procedures to simplify the reduction of VLBA data
`VLBAWIDE`	Calibrates all VLA wide-band autocorrelations with VLBARFI
`VLBCD`	Reads ascii file containing VLBA calibration info into a CD table
`VLBIN`	Task to read VLBI data from an NRAO/MPI MkII correlator
`VLBINPRM`	Control parameters to read data from NRAO/MPI MkII correlators
`VLBRF`	Plots spectral statistics of VLBA autocorrelation data for RFI
`VLBSY`	Reads ascii file containing VLBA total power info into an SY table
`VLOG`	Pre-process external VLBA calibration files
`VPLOT`	Plots uv data and model from CC file
`WEIGHTIT`	Controls modification of weights before gain/fringe solutions
`WXLOD`	Reads KEYIN-format weather information making WX table

13.43 Additional recipes

13.43.1 Sautéd sole tobago with bananas, pecans and lime

1. Preheat 1/2 cup **vegetable oil** in a heavy sauce pan over medium-high heat.
2. Dredge 8 filets of **sole** or **flounder** lightly in **flour**.
3. Sautée until golden brown, about 3 minutes each side. Remove to warm platter.
4. Pour off excess oil and wipe down sauce pan. Place pan back on stove over high head; add 1/4 cup **butter**.
5. When foamy and just starting to brown, add 2 cups diagonally sliced **bananas** (1/2" slices) and 1 cup **pecan** halves. Toss and cook for 1 minute.
6. Add 1/2 cup fresh **lime juice** and 1 cup dry white **wine** (or light stock) . Cook for another 2 minutes.
7. Add 1/4 cup **fresh herbs** (mint, parsley, coriander, basil or tarragon).
8. Pour sauce and bananas over fish. Garnish with additional banana slices and lime wedges.

Thanks to Turbana Corporation (`www.turbana.com`).

13.43.2 Banana Bombay salad

1. Puree 3 **bananas**.
2. Whisk with 1/4 cup **lemon juice**, 1/4 cup **mayonnaise**, 1/4 cup **plain yogurt**, and 1/8 – 1/4 ounce **taragon**. Refrigerate at least 2 hours.
3. Cut 2 pounds cooked **turkey** or **chicken breast** into bitesize pieces.
4. Add 1/2 cup **raisins**, 3 **green apples** cut into pieces, and 1/2 cup chopped **walnuts**. Mix.
5. Add banana puree and mix. Cut 2 **bananas** into thick chunks and add. Serve chilled.

Thanks to Chiquita Bananas. See `http://www.jaetzel.de/tim/chiquit.htm`.

13.43.3 Banana mandarin cheese pie

1. In large mixer bowl, beat 8 ounces softened **cream cheese** until fluffy.
2. Gradually beat in 8 ounces **sweetened condensed milk** until smooth.
3. Stir in 1 teaspoon **lemon juice** and 1 teaspoon **vanilla extract**.
4. Slice 2 medium **bananas**, dip in lemon juice, and drain.
5. Line 8(?)-inch **graham cracker pie crust** with bananas and about 2/3 of an 11-ounce can (drained) **mandarin oranges**.
6. Pour filling over fruit and chill for 3 hours or until set.
7. Garnish top with remaining orange segments and 1 medium **banana** sliced and dipped in lemon juice.

13.43.4 Cream of banana soup

1. Cook 1 quart green **banana** pulp, 1 1/2 quarts **chicken stock**, 1 small **celery stalk**, 1/2 **onion**, 1 **carrot**, 1 small **bay leaf**, 5 **peppercorns**, and **salt** to taste together for about 30 minutes until the mixture thickens.
2. Strain over 1/4 cup **flour** and 1/4 cup **butter** which have been combined as for a white sauce. Cook until thickened.
3. Just before serving, add 2 cups **cream** or **milk** and heat.
4. Serve with a slice of lemon on each plate as a garnish.

13.43.5 Banana relish

1. Cut 12 **bananas**, 1 pound **dates**, and 2 pounds **Bermuda onions** into small pieces.
2. Add 2/3 cup **molasses**, 1/2 teaspoon ground **ginger**, 1 teaspoon **salt**, 1 teaspoon **allspice**, 1 cup **water**, and 2 cups **vinegar**; mix well.
3. Turn into a large stone jar or crock, bake in a slow oven till rich brown, seal in jars while hot.

13.43.6 Banana coffeelate

1. Peel and mash 2 ripe **bananas**.
2. Blend in 1/2 teaspoon **vanilla extract**, a few grains **salt**, 1/4 cup **chocolate syrup**, 2 teaspoons **sugar**, and 2 teaspoons instant powdered **coffee**.
3. Add $1\frac{1}{2}$ cups **milk**.
4. Beat with rotary beater or electric mixer until smooth and creamy. Chill.

13.43.7 Banana pick-me-up

1. Slice ripe, peeled **bananas** into 3 cm chunks.
2. Wrap each chunk in strip blanched **bacon**.
3. Prepare mixture of **brown sugar** and **cinnamon** to taste.
4. Sprinkle mixture over banana chunks.
5. Bake at 350° F until the bacon is crisp and the sugar slightly caramelized.