Glossary of the Tasks in the NOAO Packages
IRAF Version 2.8

Task		Package		Description	Note
addsets	-	onedspec	-	Add subsets of strings of spectra	1
airmass	-	astutil	-	Compute the airmass at a given elevation above the horizon	
apdefault	-	apextract	-	Set the default aperture parameters	2
apedit	-	apextract	-	Edit apertures interactively	2
apextract	-	twodspec	-	Aperture Extraction Package	
apfind	-	apextract	-	Automatically find spectra and define apertures	2
apio	-	apextract	-	Set the I/O parameters for the APEXTRACT tasks	3
apnormalize	-	apextract	-	Normalize 2D apertures by 1D functions	4
apphot	-	digiphot	-	Aperture Photometry Package	
apscatter	-	apextract	-	Fit and subtract scattered light	4
apselect	-	apphot	-	Extract select fields from apphot output files	
apstrip	-	apextract	-	Extract two dimensional aperture strips	
apsum	-	apextract	-	Extract one dimensional aperture sums	2
aptrace	-	apextract	-	Trace positions of spectra	2
asttimes	-	astutil	-	Compute UT, Julian day, epoch, and sidereal time	
background	-	generic	-	Fit and subtract a line or column background	5
badpiximage	-	ccdred	-	Create a bad pixel mask image from a bad pixel file	
batchred	-	onedspec	-	Batch reductions of beam-switched data	1
bias	-	imred	-	General bias subtraction tools	
binfil	-	proto	-	Create a binary file from an IRAF image	
binpairs	-	proto	-	Bin pairs of (x,y) points in log separation	
bplot	-	onedspec	-	Batch plots of spectra	6
bscale	-	proto	-	Brightness scale images: new = (old-bzero) / bscale	7
bswitch	-	onedspec	-	Beam-switch strings of spectra to make obj-sky pairs	1
calibrate	-	onedspec	-	Apply extinction and flux calibrations to spectra	8
ccdgeometry	-	ccdred	-	Discussion of CCD coordinate/geometry keywords	
ccdgroups	-	ccdred	-	Group CCD images into image lists	
ccdhedit	-	ccdred	-	CCD image header editor	
ccdlist	-	ccdred	-	List CCD processing information	
ccdproc	-	ccdred	-	Process CCD images	
ccdred	-	ccdred	-	CCD image reduction package	
ccdred	-	imred	-	CCD reductions	
ccdtest	-	ccdred	-	CCD test and demonstration package	
ccdtime	-	astutil	-	Compute time required to observe star of given magnitude	
ccdtypes	-	ccdred	-	Description of the CCD image types	
center	-	apphot	-	Compute accurate centers for a list of objects	7
centerpars	-	apphot	-	Edit the centering parameters	7
coefs	-	irs	-	Extract mtn reduced coefficients from henear scans	9
coincor	-	onedspec	-	Correct spectra for detector count rates	9
colbias	-	bias	-	Fit and subtract an average column bias	
combine	-	ccdred	-	Combine CCD images	
combine	-	onedspec	-	Combine spectra having different wavelength ranges	6
continuum	-	onedspec	-	Fit the continuum in spectra	6
cosmicrays	-	ccdred	-	Detect and replace cosmic rays	10

coude	-	imred	-	Coude reductions	
daofind	-	apphot	-	Find stars in an image using the DAO algorithm	
darkcombine	-	ccdred	-	Combine and process dark count images	
darksub	-	generic	-	Scale and subtract a dark count image	
datapars	-	apphot	-	Edit the data dependent parameters	7
dematch	-	dtoi	-	Match a list of density values to exposure values	
demo	-	ccdtest	-	Run a demonstration of the CCD reduction package	
destreak	-	vtel	-	Destreak He 10830 grams	
destreak5	-	vtel	-	First pass processing CL script for 10830 grams	
dicoplot	-	vtel	-	Make dicomed plots of carrington maps	
dispcor	-	onedspec	-	Dispersion correct spectra	6
dtoi	-	imred	-	Density to Intensity reductions for photographic plates	
ecbplot	-	echelle	-	Batch plots of echelle spectra	
eccontinuum	-	echelle	-	Fit the continuum of echelle spectra	
ecdispcor	-	echelle	-	Dispersion correct spectra	
echelle	-	imred	-	Echelle spectra reductions	
ecidentify	-	echelle	-	Identify features in spectrum for dispersion solution	
ecreidentify	-	echelle	-	Automatically reidentify features in spectra	
ecselect	-	echelle	-	Select and extract apertures from echelle spectra	
epix	-	proto	-	Edit pixels in an image	
extinction	-	longslit	-	Apply atmospheric extinction corrections to images	
fields	-	proto	-	Extract specified fields from a list	
findpeaks	-	multispec	-	Find the peaks	
fitcoords	-	longslit	-	Fit user coordinates to image coordinates	
fitfunction	-	multispec	-	Fit a function to the spectra parameter values	
fitgauss5	-	multispec	-	Fit spectra profiles with five parameter Gaussian model	
fitpsf	-	apphot	-	Model the stellar psf with an analytic function	
fitsky	-	apphot	-	Compute sky values in a list of annular or circular regions	
fitskypars	-	apphot	-	Edit the sky fitting parameters	
fitslogr	-	vtel	-	Make a log of certain header parameters from a FITS tape	
fixpix	-	proto	-	Fix bad pixels by linear interpolation from nearby pixels	
flat1d	-	generic	-	Make flat field by fitting a 1D func. to the lines or columns	
flatcombine	-	ccdred	-	Combine and process flat field images	
flatdiv	-	onedspec	-	Divide spectra by flat field	1
flatfields	-	ccdred	-	Discussion of CCD flat field calibrations	
flatfit	-	onedspec	-	Sum and normalize flat field spectra	1
flatten	-	generic	-	Flatten images using a flat field	7
fluxcalib	-	longslit	-	Apply flux calibration to images	
galactic	-	astutil	-	Convert ra, dec to galactic coordinates	
generic	-	imred	-	Generic image reductions tools	
getsqib	-	vtel	-	Extract the squibby brightness image from a full disk scan	
guide	-	ccdred	-	Introductory guide to using the CCDRED package	
hdfit	-	dtoi	-	Fit a curve to density, log exposure values	
hdshift	-	dtoi	-	Align related HD curves	
hdtoi	-	dtoi	-	Apply DTOI transformation to density image	
identify	-	onedspec	-	Identify features in spectrum for dispersion solution	11
iids	-	imred	-	KPNO IIDS spectral reductions	
illumination	-	longslit	-	Determine illumination calibration	

imcntr	-	proto	-	Locate the center of a stellar image	
imedit	-	proto	-	Examine and edit pixels in images	
imexamine	-	proto	-	Examine images using image display, graphics, and text	
imfunction	-	proto	-	Apply a function to the image pixel values	
imreplace	-	proto	-	Replace pixels in a range by a constant	
imscale	-	proto	-	Scale an image to a specified (windowed) mean	
imslice	-	proto	-	Slice images into images of lower dimension	
imstack	-	proto	-	Stack images into an image of higher dimension	
imtitle	-	proto	-	Change the title of an image	
instruments	-	ccdred	-	Instrument specific data files	
interp	-	proto	-	Interpolate for a value in a table of X,Y pairs	
irafil	-	proto	-	Create an IRAF image from a binary data file	
iralign	-	proto	-	Align the mosaiced image produced by irmosaic	7
irmatch1d	-	proto	-	Align and intensity match image produced by irmosaic (1D)	7
irmatch2d	-	proto	-	Align and intensity match image produced by irmosaic (2D)	7
irmosaic	-	proto	-	Mosaic an ordered list of images onto a grid	7
irred	-	imred	-	KPNO IR camera reductions	
irs	-	imred	-	KPNO IRS spectral reductions	
join	-	proto	-	Join two files line by line	
lcalib	-	onedspec	-	List calibration file data	12
ldumpf	-	mtlocal	-	List the permanent files on a Cyber DUMPF tape	
linebias	-	bias	-	Fit and subtract an average line bias	
longslit	-	twodspec	-	Longslit Package	
makehelium	-	vtel	-	Cl script for processing destreaked 10830 grams(second pass)	
makeimages	-	vtel	-	Cl script for processing magnetograms into projected maps	
merge	-	vtel	-	Merge daily grams into a Carrington map	
mkfringecor	-	ccdred	-	Make fringe correction images from sky images	
mkhistogram	-	proto	-	List or plot the histogram of a data stream	
mkillumcor	-	ccdred	-	Make flat field illumination correction images	
mkillumflat	-	ccdred	-	Make illumination corrected flat fields	
mkimage	-	ccdtest	-	Make or modify an image with simple values	
mkskycor	-	ccdred	-	Make sky illumination correction images	
mkskyflat	-	ccdred	-	Make sky corrected flat field images	
mkspec	-	onedspec	-	Generate an artificial spectrum	1
modellist	-	multispec	-	List data and model pixel values	
mosproc	-	irred	-	Prepare images for quick look mosaicing	
mrotlogr	-	vtel	-	Log some header parameters from a FITS rotation map tape	
mscan	-	vtel	-	Read all sector scans on a tape and put them into images	
msdispcor	-	msred	-	Dispersion correct spectra	
msextract	-	multispec	-	Extract spectra	
mslist	-	multispec	-	List entries in a MULTISPEC database	
msplot	-	multispec	-	Plot a line of image and model data	
msred	-	imred	-	Reduction package for multiple spectra data	
msreidentify	-	msred	-	Reidentify features from one multispec image to another	
msselect	-	msred	-	Select and extract apertures from spectra	
msset	-	multispec	-	Set entries in a MULTISPEC database	
multispec	-	twodspec	-	Multi-Spectra Extraction Package	
names	-	onedspec	-	Generate a list of image names from a string	13
ndprep	-	proto	-	Make neutral density filter calibration image	
newextraction	-	multispec	-	Create a new MULTISPEC extraction database	

newimage	-	multispec	-	Create a new multi-spectra image	
normalize	-	generic	-	Normalize images	
normflat	-	generic	-	Create a flat field by normalizing and replacing low values	
observatory	-	imred	-	Print observatory parameters	14
observe	-	ccdtest	-	Create an artificial CCD observation	
onedspec	-	onedspec	-	Additional information about the ONEDSPEC package	
pdm	-	astutil	-	Find periods in light curves by Phase Dispersion Minimization	
phot	-	apphot	-	Measure magnitudes for a list of stars	
photpars	-	apphot	-	Edit the photometry parameters	
pimtext	-	vtel	-	Put text directly into images using a pixel font	
polymark	-	apphot	-	Create polygon lists for polyphot	
polypars	-	apphot	-	Edit the polyphot parameters	
polyphot	-	apphot	-	Measure magnitudes inside a list of polygonal regions	
powercor	-	onedspec	-	Apply a power-law flux correction correction	9
precess	-	astutil	-	Precess a list of astronomical coordinates	
process	-	onedspec	-	A task generated by BATCHRED	1
putsqib	-	vtel	-	Merge a squibby brightness image into a full disk image	
qphot	-	apphot	-	Measure quick magnitudes for a list of stars	
quickfit	-	vtel	-	Fit an ellipse to the solar limb	
r2df	-	mtlocal	-	Convert a CTIO 2-d frutti image into an IRAF image	
radplt	-	proto	-	Plot a radial profile of a stellar image	
radprof	-	apphot	-	Compute the stellar radial profile of a list of stars	
rcamera	-	mtlocal	-	Convert a CAMERA image into an IRAF image	
rdumpf	-	mtlocal	-	Convert IPPS rasters from a DUMPF tape to IRAF images	
readvt	-	vtel	-	Read a full disk tape and produce an IRAF image	
rebin	-	onedspec	-	Rebin spectra to new dispersion parameters	6
refspectra	-	onedspec	-	Assign wavelength reference spectra to other spectra	15
reidentify	-	onedspec	-	Automatically identify features in spectra	11
response	-	longslit	-	Determine response calibration	
ridsfile	-	mtlocal	-	Convert IDSFILES from a DUMPF tape to IRAF images	
ridsmtn	-	mtlocal	-	Convert mountain format IDS/IRS data to IRAF images	
ridsout	-	mtlocal	-	Convert a text file in IDSOUT format to IRAF images	
rmap	-	vtel	-	Map a full disk image into a 180 by 180 flat image	
rpds	-	mtlocal	-	Convert a PDS image into an IRAF image	
rrcopy	-	mtlocal	-	Convert IPPS rasters from an RCOPY tape to IRAF images	
rvcorrect	-	astutil	-	Compute radial velocity corrections	
selftest	-	dtoi	-	Self test program to check DTOI transformation	
sensfunc	-	onedspec	-	Create sensitivity function	8
setairmass	-	astutil	-	Compute effective airmass and middle UT for an exposure	16
setdisp	-	onedspec	-	Set dispersion image header parameters	17
setinstrument	-	ccdred	-	Set instrument parameters	
sextract	-	onedspec	-	Extract subspectra from dispersion corrected spectra	6
sflip	-	onedspec	-	Flip direction of dispersion	6
shedit	-	onedspec	-	Edit spectrum header parameters	18
sinterp	-	onedspec	-	Interpolate a table of x,y pairs to create a spectrum	12
slist	-	onedspec	-	List spectrum header parameters	18
slitpic	-	proto	-	Generate IRAF image of aperture slit mask	
specphot	-	imred	-	Spectrophotometric reductions	
specplot	-	onedspec	-	Stack and plot multiple spectra	15

splot	-	onedspec	-	Preliminary spectral plot/analysis	15
spotlist	-	dtoi	-	Generate a list of calibration spot values	
standard	-	onedspec	-	Identify standard stars to be used in sensitivity calc	8
subsection	-	ccdtest	-	Create an artificial subsection CCD observation	
subsets	-	ccdred	-	Description of CCD subsets	
subsets	-	onedspec	-	Subtract pairs in strings of spectra	1
sums	-	onedspec	-	Generate sums of object and sky spectra by aperture	12
syndico	-	vtel	-	Make dicomed print of daily grams 18 cm across	
tcopy	-	vtel	-	Tape to tape copy routine	
toonedspec	-	proto	-	Extract lines/columns from 2D spectra to 1D spectra	
transform	-	longslit	-	Transform longslit images to user coordinates	
trim	-	vtel	-	Set all pixels outside the limb to 0.0 (use sqib for limb)	
tvmark	-	proto	-	Mark objects on the image display	
unwrap	-	vtel	-	Remove effects of data wraparound on continuum scans	
vtblink	-	vtel	-	Blink daily grams on the IIS to check for registration	
vtel	-	imred	-	Solar vacuum telescope image reductions	
vtexamine	-	vtel	-	Examine a vacuum telescope tape, print headers and profile	
widstape	-	mtlocal	-	Convert ONEDSPEC spectra to IDSOUT text format	
wphot	-	apphot	-	Measure magnitudes for a list of stars with weighting	
writetape	-	vtel	-	Cl script to write 5 full disk grams to tape	
writevt	-	vtel	-	Write an IRAF image to tape in vacuum telescope format	
zerocombine	-	ccdred	-	Combine and process zero level images	

Notes:

(1) Tasks also in iids and irs packages.
(2) Tasks also in coude, echelle, msred, and specphot packages.
(3) Tasks also in coude, echelle, and specphot packages.
(4) Tasks also in echelle and msred packages.
(5) Tasks also in longslit package.
(6) Tasks also in coude, iids, irs, and specphot packages.
(7) Tasks also in irred package.
(8) Tasks also in echelle, iids, irs, msred, and specphot packages.
(9) Tasks also in iids package.
(10) Tasks also in generic package.
(11) Tasks also in coude, iids, irs, longslit, msred, and specphot packages.
(12) Tasks also in iids, irs, and specphot packages.
(13) Tasks also in coude, iids, and irs packages.
(14) Tasks also in astutil, onedspec, and twodspec packages.
(15) Tasks also in coude, echelle, iids, irs, msred, and specphot packages.
(16) Tasks also in imred and twodspec packages.
(17) Tasks also in coude, echelle, msred, specphot, and twodspec packages.
(18) Tasks also in coude, echelle, iids, irs, and specphot packages.