For users who are intending to create new procedures or functions and wish to avoid creating program names which duplicate an existing one, which provides a quick and easy check for existing names. It also provides you with information about which copy IDL actually was using, your own *modified* version or the *old* version in the CDS library.

```
IDL> which, 'purpose'        ; Determine which routine IDL is picking up

/cds/util/help/purpose.pro   ; Resulting output
```

We should also mention a general software package called the SERTS Image Display Routines and the SERTS Graphics Device Routines. The software is described in CDS Software Notes No. 5 and 6 (Thompson 1993b, 1993c). A few examples of this software will be given in Section 5.6.

3 The CDS Instrument

The Coronal Diagnostic Spectrometer (CDS) consists of a Wolter-Schwartschild II grazing incidence telescope which has the focus at a slit assembly which lies beyond a flat scan mirror. After the slit, two components of the beam are fed into two spectrometers. One component feeds a normal incidence spectrometer (NIS) with a twin toroidal grating assembly and a 2-D detector. Another part of the beam is fed to a grazing incidence spectrometer (GIS) with a spherical grating and an array of four 1-D detectors along the Rowland Circle.

The NIS detector consists of 1024×1024 pixels. Two spectra are imaged onto the CCD, offset on either side of the horizontal center-line as shown in Figure 1. The spectral coverage is approximately 310–380 Å and 517–633 Å The longest slits are 240 arcseconds in length which, at a plate scale of 12.5 micron/arcsec, translates to 3 mm on the detector. Thus, only the central 1024×256 pixel area (approximately) is used. The horizontal direction is the direction of spectral dispersion while the vertical direction is the spatial dimension along the slit.

In practice, it will be rare that CDS can return the full NIS detector output due to the limited telemetry rates available. In most cases a selection of data will be used, to limit the telemetry requirements, where a set of detector data windows, or line windows (since the windows are usually centered around emission lines) will be extracted from the full detector. An example of a typical line selection is shown in Figure 2 where 12 windows have been selected.

The GIS spectrum is focused into four 1-D detectors and cover the wavelength ranges 155-244 Å, 261–346 Å, 395–496 Å, and 662–787 Å. Figure 3 gives an example of a synthetic GIS spectrum As for the NIS detector a selection of line windows can be extracted from the four GIS detectors. A summary of line lists to be used during different observing sequences can be found in the CDS Blue Book.

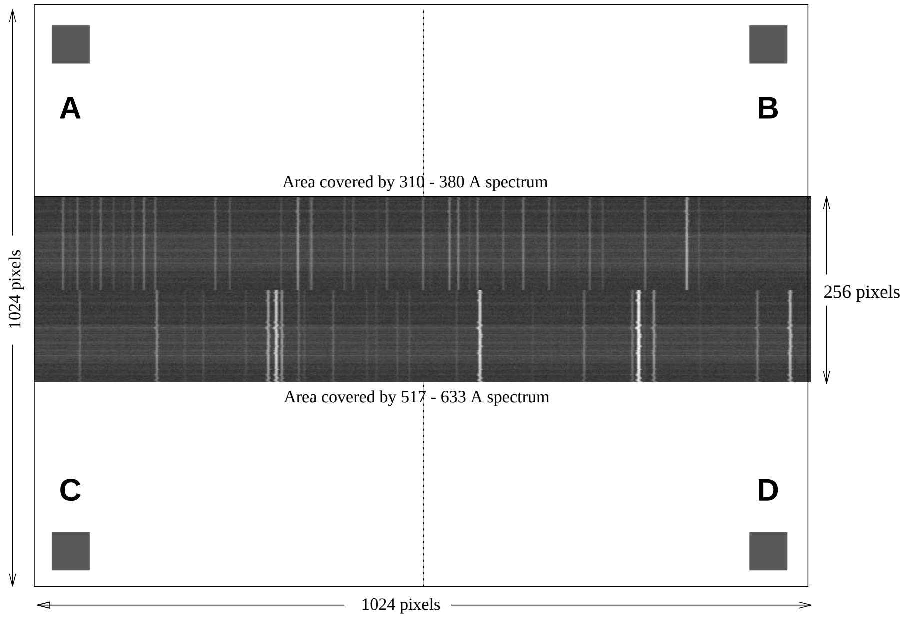

Figure 1: Schematic illustration of the NIS detector where the two normal incidence spectra are focused onto the center portion of the detector. Thus, only the central 1024×256 pixel area is used.

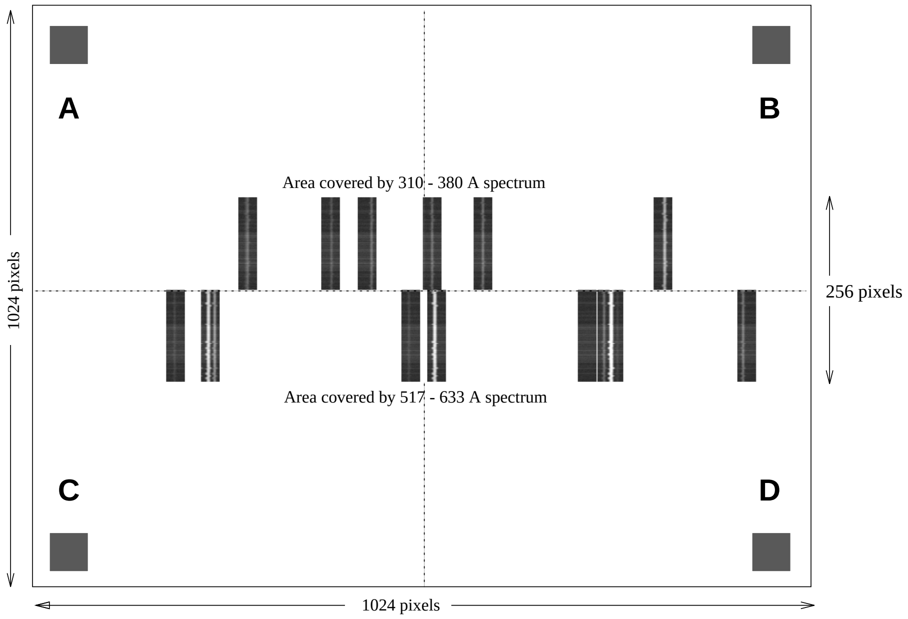

Figure 2: In most cases only selected line windows will be transmitted to ground. The illustration shows a typical line selection from the NIS detector.

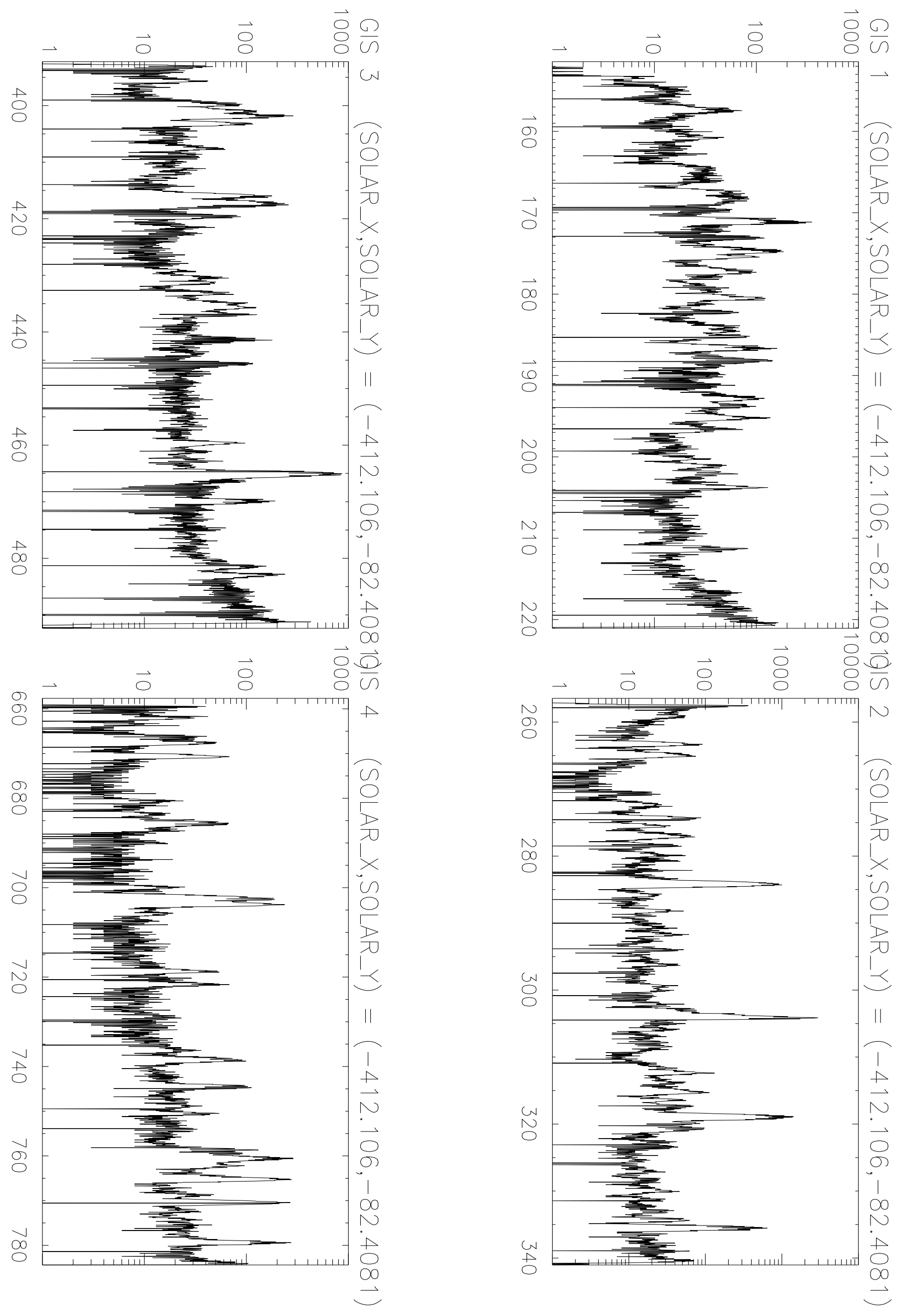

Figure 3: Example of a GIS spectrum showing the four detectors in individual plots.