How to read PDS data

some simple examples

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Step-by-step procedure 1

IDL> openr,1,'CM_*.QUB'**

In the header,

> RECORD SIZE = 512 bytes
> QUBE = 82

Then, qube core starts from 82th line.
You need to read a block of (512,81) first.

IDL> recblock=bytarr(512,81)
IDL> readu,1,recblock

Step-by-step procedure 2

Qube core and suffix are described as:

> CORE_ITEMS = (60,54,256)

> SUFFIX_ITEMS=(0,0,8)

> CORE_ITEM_TYPE= SUN_REAL

(data type, byteorder info.)

Then, read a block of (60+0, 54+0, 256+8)=(60,54,264)

```
IDL>  qube_and_suffix=fltarr(60,54,264)
IDL>  readu,1,qube_and_suffix
IDL>  close,1
```

Step-by-step procedure 3

After reading data block, change byteorder.

'byteorder' options depend on 'CORE_ITEM_TYPE.'

Try different options until you get a right result !

```
IDL>  byteorder, qube_and_suffix,/xdrtof
```

Then, separate core and suffix

```
IDL>  qube=qube_and_suffix(*,*,0:255)
IDL>  suffix=qube_and_suffix(*,*,256:263)
```

Here, suffix contains positional info.

```
> BAND_SUFFIX_NAME = (LATITUDE, LONGITUDE,.....)
```

Step-by-step procedure 4

Now, you can display images at any wavelength.

Let's try band 0 (= 0.884 micron)

```
IDL>  bandindex=0
IDL>  img=reform(qube(*,*,bandindex))
IDL>  window,0,xsize=60,ysize=54
IDL>  tvscl, img > 0. < 1.
```

Or, you can plot a spectrum of any pixel.

```
IDL> plot,qube(30,27,*),yrange=[0,1],/xstyle
```

Have fun !!