



Virtual Columns

Virtual columns - such as RA and DEC - do not physically exist in the event file; they are defined by the WCS information attached to another column, e.g. SKY.

For example, looking at any event file:

```
unix% dmlist acisf01838N001_evt2.fits"[cols sky]" cols
-----
Columns for Table Block EVENTS
-----
ColNo  Name                Unit      Type      Range      sky coordinates
  1    sky(x,y)            pixel     Real4     0.50:      8192.50
-----
World Coord Transforms for Columns in Table Block EVENTS
-----
ColNo  Name
1:     EQPOS(RA ) = (+278.3860) +TAN[(-0.000136667)* (sky(x)-(+4096.50))]
      (DEC)  (-10.5899 )      (+0.000136667) ( (y) (+4096.50))
```

There clearly are columns named "x" and "y." Due to the presence of the "World Coord Transforms" information, you can access the virtual columns RA and DEC as well:

```
unix% dmlist acisf01838N001_evt2.fits"[cols ra,dec][#row=1:5]" data
-----
Data for Table Block EVENTS
-----
ROW    EQPOS(RA,DEC)
  1 (    278.0762532107,    -10.6889779897)
  2 (    278.0264043868,    -10.6477420690)
  3 (    278.0274740929,    -10.6286233286)
  4 (    278.4315818226,    -10.4901544415)
  5 (    278.4249218528,    -10.5537226939)
```

