```
      include 'PGS_CBP.f'
      include 'PGS_SMF.f'
      integer pgs_cbp_earth_cb_vector
      character*27 asciiutc
      double precision offsets
      double precision sun_vector(3)
      double precision rho
      double precision sunlat
      double precision darklat
      integer retval
      data offsets /0.0/
      data asciiutc /'2002-03-22T12:00'/

      retval = pgs_cbp_earth_cb_vector(1, asciiutc, offsets, pgsd_sun,
     1  sun_vector)
      IF (retval .NE. PGS_S_SUCCESS) THEN
          print *, 'PGS_CBP_Earth_CB_Vector(', asciiutc, ') returned',
     1        retval
C         CALL exit(0)
      ENDIF

      rho = sqrt(sun_vector(1)**2 + sun_vector(2)**2)
      sunlat = cabs(sun_vector(3), rho) * 45.0/atan(1.0)
      IF(sunlat .GT. 0.0) THEN
          darklat  = sunlat - 90.0
      ELSE
          darklat  = sunlat + 90.0
      ENDIF

      print *, 'Dark latitude: ', darklat

      CALL exit(1)
      END
```