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pro read_swath_l1_amsu, pattern, numfp, numline, $
    tai, lat, lon, rad, solzen, solazi=solazi, $
    scanang=scanang, $
    satazi=satazi, satzen=satzen, $
    sun_glint_distance=sun_glint_distance, $
    glintlat=glintlat, glintlon=glintlon, $
    satheight=satheight

filename = findfile ( pattern, count = cnt )
if cnt ne 1 then begin
    print, 'findfile did not return exactly one file ', cnt, pattern
    numfp = 0
    numline = 0
    return
endif

print, 'read_swath_l1_amsu: ', filename[0]

FAIL = -1
SWATH_L1AMSU = 'L1B_AMSU'

fid=EOS_SW_OPEN(filename[0], /READ)
if fid eq FAIL then return

SWid=EOS_SW_ATTACH(fid, SWATH_L1AMSU)
if SWid eq FAIL then return

ret = EOS_SW_READFIELD(Swid,"Time",tai,EDGE=edge)
sz=size(tai)
numfp=sz[1]
numline=sz[2]

ret = EOS_SW_READFIELD(Swid,"Latitude",lat)
ret = EOS_SW_READFIELD(Swid,"Longitude",lon)
ret = EOS_SW_READFIELD(Swid,"solzen",solzen)
ret = EOS_SW_READFIELD(Swid,"brightness_temp",rad)

if arg_present(satazi) then begin
    print, "reading the satellite azimuth angle"
    ret = EOS_SW_READFIELD(Swid,"satazi",satazi)
endif

if arg_present(satzen) then begin
    print, "reading the satellite zenith angle"
    ret = EOS_SW_READFIELD(Swid,"satzen",satzen)
endif

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if arg_present(solazi) then begin
    print, "reading the solar azimuth angle"
    ret = EOS_SW_READFIELD(SWid,"solazi",solazi)
endif

if arg_present(solzen) then begin
    print, "reading the solar zenith angle"
    ret = EOS_SW_READFIELD(SWid,"solzen",solzen)
endif

if arg_present(scanang) then begin
    print, "reading the scan angle"
    ret = EOS_SW_READFIELD(SWid,"scanang",scanang)
endif

if arg_present(glintlat) then begin
    print, "reading the sun glint latitude"
    ret = EOS_SW_READFIELD(SWid,"glintlat",glintlat)
endif

if arg_present(glintlon) then begin
    print, "reading the sun glint longitude"
    ret = EOS_SW_READFIELD(SWid,"glintlon",glintlon)
endif

if arg_present(sun_glint_distance) then begin
    print, "reading the sun glint distance"
    ret = EOS_SW_READFIELD(SWid,"sun_glint_distance",sun_glint_distance)
endif

if arg_present(satheight) then begin
    print, "reading the satellite height"
    ret = EOS_SW_READFIELD(SWid,"satheight",satheight)
endif

print, "done reading - detaching and closing the file"
ret = EOS_SW_DETACH(SWid)
ret = EOS_SW_CLOSE(fid)

end

```