

READING TIFF 3D SPECTROHELIOGRAMS : IDL CODE

```
;path to access files on disk storage
path='C:\Users\malherbe\Documents\spectroheliogram\tests\'
;Observation : 3D TIFF filename to read ; indices will be reorganized properly by the code
file='ha07072018.071133.TIF'
;Dark current : 2D TIFF filename to read
filedc='dha07072018.071133.TIF'
;OUTPUT 3D IMAGE WILL BE GIVEN BY FLOAT ARRAY TAB(im,jm,lm) where :
;first indice (i) = abscissa (x in pixels) on the sun with i varying from 0 to (im-1)
;second indice (j) = ordinate (y in pixels) on the sun with j varying from 0 to (jm-1)
;third indice (l) = wavelength (lambda in pixels) with l varying from 0 to (lm-1)
;SPECTRAL PIXEL : 0.093 A for CaII H and K (order 5) ; 0.155 A for Halpha (order 3)
;IMAGE HAS TO BE ROTATED LATER (P ANGLE) to be north/south (y) and Est/West (x)
;
;DARK CURRENT
dc = READ_TIFF(path+filedc)
dc = float(dc)
;
;OBSERVATION
;reading informations concerning the file (info structure) :
ok = QUERY_TIFF(path+file,info)
;number of wavelengths (lm)
dim=info.dimensions
lm=dim(0)
;number of pixels in y direction (jm)
jm=dim(1)
;number of pixels in x direction (im)
im=info.NUM_IMAGES
print,'Dimensions of output image will be : ',im,jm,lm
;FLOAT ARRAY TO RETURN THE 3D IMAGE : TAB(x,y,lambda)
tab=fltarr(im,jm,lm)
;READING THE 3D TIFF IMAGE ; OUTPUT IS IN FLOAT ARRAY TAB(im,jm,lm)
IF (ok) THEN BEGIN
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```
FOR i=0,im-1 DO BEGIN
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```
  img = READ_TIFF(path+file,IMAGE_INDEX=i)
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```
  ;DC subtraction
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```
  img = float(img) - dc
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```
  img = img > 0.
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```
  img = reverse(img,1)
```

```
  for j=0,jm-1 do tab(im-i-1,j,*) = img(*,j)
```

```
ENDFOR
```

```
ENDIF
```

```
;Use PLOT, tab(im/2,jm/2,*) to see the line profile near disk center
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```
;Use TVSCL, total(tab,3) to see the spectroheliogram integrated over all available wavelengths
```