Subject: Micro-manager JSON Import
Posted by jpskin on Mon, 11 Aug 2014 03:44:05 GMT
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Hi, I recently needed to get the JSON data embedded in Micro-manager.org .tiff files into IDL. I was given some help on Micro-manager forum to get this data and would like to post the script here for others to use. It is a great example of using the JSON_PARSE function.

```
; docformat = 'rst'
  ;+
  ; :Description:
  ;    takes a micro-manager tiff file and prints the
  ;    EM Gain, Preamp Gain and Readout Mode.  This assumes
  ;    a Micro-manager file stack is given, will not check, however. Requires
  ;    idl 8.2 in order to use the JSON_PARSE function and put the
  ;    micro-manager JSON data in a hash variable.  Any key can be printed once
  ;    read.
  ;
  ; :Params:
  ;    file:
  ;    in, .tiff file from micromanager
  ;
  ;
  ; :Author: jpskinner
  ;-

pro cameraSettings, file
  compile_opt idl2

  openr, 1, file

  ; Determine endian status
  stat = read_binary(1, data_dims=2)

  if string(stat) eq 'MM' then e='big' else e='little'


  ; Get the offset to the first IFD
  point_lun, 1, 4
  ifd_loc = read_binary(1, data_dims=1, data_type=13, endian=e)
  print, 'First IFD location: ', ifd_loc

  ;go to tag 17 which should be 51123
  point_lun, 1, ifd_loc+2+16*12
  tag = read_binary(1, data_dims=1, data_type=12, endian=e)
  if tag ne 51123 then begin
    print, 'Tag not present in file.'
    print, 'Found tag: ', tag
```

```
    close, 1
    return
  endif
  type = read_binary(1, data_dims=1, data_type=2, endian=e)
  n = read_binary(1, data_dims=1, data_type=13, endian=e)
  offset = read_binary(1, data_dims=1, data_type=13, endian=e)

  ; Go to the micro-manager metadata.
  point_lun, 1, offset
  data = read_binary(1, data_dims=n, endian=e)
  close, 1

  metaData = json_parse(string(data))

  ;Print the info desired.
  print, 'Gain: ', metaData['Andor iXon-Gain']
  print, 'Readout: ', metaData['Andor iXon-ReadoutMode']
  print, 'Pre-Amp: ', metaData['Andor iXon-Pre-Amp-Gain']


end
```
