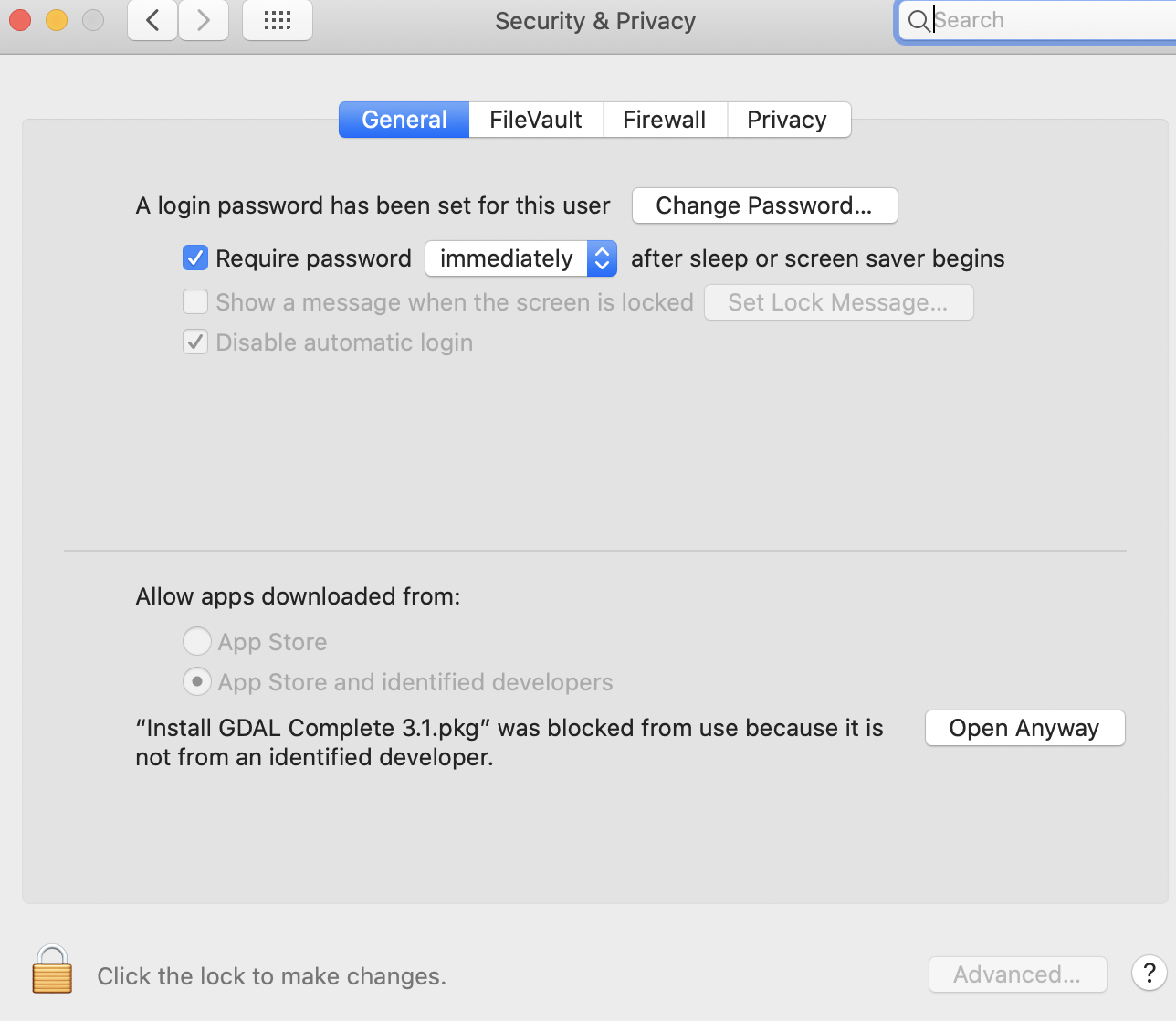
**Exercise 5 – Browsing An HDF-EOS file**

Prerequisite

* Python: <http://www.python.org/doc/>
* GDAL: <http://www.gdal.org/>
  + Geospatial Data Abstraction Library
  + Raster data access
  + Used by commercial software like ArcGIS
  + C++ library, but Python bindings exist
  + Matplotlib: <http://matplotlib.org/>

How to install GDAL on Mac

1. Download: <http://www.kyngchaos.com/software/frameworks/#gdal_complete>
2. Install: May require your permission to install it, choose “Open Anyway”



1. After installation, open your Terminal, type

echo 'export PATH=/Library/Frameworks/GDAL.framework/Programs:$PATH' >> ~/.bash\_profile

source ~/.bash\_profile

1. You can check if you are correctly installed it:

gdalinfo --version

HDF – EOS files have a wealth of information within them. There are two approaches to access metadata from HDF files through python/GDAL.

1. **Access HDF-­‐EOS file from Python script**

# This is a python script

from osgeo import gdal

import os

## set your work directory

os.chdir('/Users/Shared/GE529-2020/data/')

## Open dataset

src\_ds=gdal.Open('HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:Fpar\_500m')

## Get Raster Metadata

print(src\_ds.GetMetadata())

## Get raster band

srcband=(src\_ds.GetRasterBand(1))

## Get raster band information

print('////////////////////////////Raster Band Information/////////////////////////////////////////////')

print(srcband.GetStatistics(True,True))

print(srcband.GetNoDataValue())

print(srcband.GetMinimum())

print(srcband.GetMaximum())

print(srcband.GetScale())

print(srcband.GetUnitType())

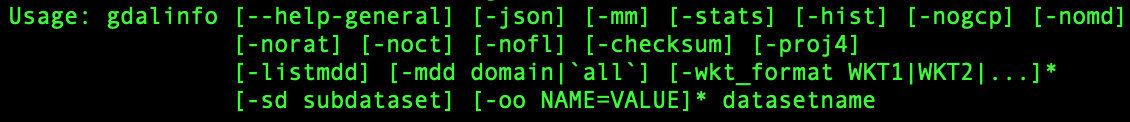
print ('////////////////////////////Output from GDALINFO.EXE/////////////////////////////////////////////')

# Indirectly call the system command by python, which can be done in the terminal directly

os.system('gdalinfo MOD15A2H.A2002225.h18v04.006.2015150063613.hdf')

**See example script: Lab5.py**

1. **Access HDF-­‐EOS file from Python script**



Example:

gdalinfo MOD15A2H.A2002225.h18v04.006.2015150063613.hdf

Driver: HDF4/Hierarchical Data Format Release 4

Files: MOD15A2H.A2002225.h18v04.006.2015150063613.hdf

Size is 512, 512

Metadata:

ALGORITHMPACKAGEACCEPTANCEDATE=10-01-2004

ALGORITHMPACKAGEMATURITYCODE=Normal

ALGORITHMPACKAGENAME=MODPR\_15A2

ALGORITHMPACKAGEVERSION=6

ASSOCIATEDINSTRUMENTSHORTNAME.1=MODIS

ASSOCIATEDPLATFORMSHORTNAME.1=Terra

ASSOCIATEDSENSORSHORTNAME.1=MODIS

AUTOMATICQUALITYFLAG.1=Passed

AUTOMATICQUALITYFLAGEXPLANATION.1=No automatic quality assessment is performed in the PGE

CHARACTERISTICBINANGULARSIZE500M=15.0

CHARACTERISTICBINSIZE500M=463.312716527778

DATACOLUMNS500M=2400

DATAROWS500M=2400

DAYNIGHTFLAG=Day

DESCRREVISION=6.0

EASTBOUNDINGCOORDINATE=15.5702026309755

ENGINEERING\_DATA=

# MOD\_PR15A2 (Vers 5.0.4 Rele 10.18.2006 23:59)

# MUM API Vers 2.5.8 Rev 104 Rel. 11.15.2000 10:49 (pgs)

# (c) 2000 J.M. Glassy, NTSG,LLSD

# portions of MUM API by Petr Votava,NTSG Lab,U.Montana

# HOST ECS\_PGS\_VirtualHost PROCESS 19540618

# PLATFORM Sys genericunix Vers unknown Release unknown Node (no nodename available)

# INIT-TIME Sat May 30 02:35:35 2015

YEARDAY 225 COMPOSITE\_PERIOD 29 FIRSTDAY\_IN\_PERIOD 225

SDS[PGE34\_ISG\_MBRLUT] %ID 8650752 Rank 2 (664 120)

SDS[PGE34\_OUTFIELD\_PROP] %ID 8650753 Rank 2 (78 174)

SDS[PGE34\_BROWSEFIELD\_PROP] %ID 8650754 Rank 2 (77 158)

READANC SDS[PGE34\_ISG\_MBRLUT] RANK 2 (664 120)

READANC SDS[PGE34\_OUTFIELD\_PROP] RANK 2 (78 174)

READANC SDS[PGE34\_BROWSEFIELD\_PROP] RANK 2 (77 158)

READANC SDS[PGE34\_ECSMETA\_DICT] RANK 2 (73 110)

READANC SDS[PGE34\_RELEASE\_NOTES] RANK 2 (84 98)

FLDPROP SDSnam(PGE34\_OUTFIELD\_PROP)MoleName(PGE34\_OUTFIELD\_PROP)Status 3 Nelem 13572

BROWSE cvlBrwMol 0 Nelem 57600 Type 21 Status 3

BROWSE cvlBrwMol 1 Nelem 57600 Type 21 Status 3

BROWSE cvlBrwMol 2 Nelem 57600 Type 21 Status 3

BROWSE cvlBrwMol 3 Nelem 57600 Type 21 Status 3

BROWSE: NEW GRID ID 4194312

BROWSEFIELD 0 Sum 7004689 Average 121.609

BROWSEFIELD 1 Sum 5278486 Average 91.6404

BROWSEFIELD 2 Sum 2933330 Average 50.9259

BROWSEFIELD 3 Sum 8105421 Average 140.719

BROWSE-DONE: N-Pixels 57600 Invalid offsets: 0 OutOfRange 0

COMPOSITING FPAR FREQUENCIES

FPAR 0 461

FPAR 1 288

FPAR 2 235

FPAR 3 165

FPAR 4 97

FPAR 5 1047

FPAR 6 6125

FPAR 7 5676

FPAR 8 643

FPAR 9 1183

FPAR 10 2024

FPAR 11 2599

FPAR 12 3774

FPAR 13 6257

FPAR 14 3859

FPAR 15 2684

FPAR 16 4892

FPAR 17 3691

FPAR 18 4377

FPAR 19 4465

FPAR 20 4831

FPAR 21 6932

FPAR 22 7501

FPAR 23 9916

FPAR 24 13359

FPAR 25 13608

FPAR 26 11948

FPAR 27 10508

FPAR 28 17038

FPAR 29 19407

FPAR 30 15365

FPAR 31 17623

FPAR 32 17899

FPAR 33 22777

FPAR 34 20923

FPAR 35 28319

FPAR 36 17492

FPAR 37 22357

FPAR 38 36425

FPAR 39 44702

FPAR 40 44066

FPAR 41 34601

FPAR 42 23839

FPAR 43 29502

FPAR 44 41702

FPAR 45 45733

FPAR 46 51935

FPAR 47 59039

FPAR 48 49661

FPAR 49 44794

FPAR 50 33952

FPAR 51 53578

FPAR 52 61827

FPAR 53 74758

FPAR 54 68417

FPAR 55 44027

FPAR 56 45518

FPAR 57 62989

FPAR 58 59908

FPAR 59 73931

FPAR 60 81580

FPAR 61 69919

FPAR 62 65659

FPAR 63 54910

FPAR 64 66299

FPAR 65 77126

FPAR 66 84666

FPAR 67 80397

FPAR 68 72537

FPAR 69 65633

FPAR 70 64515

FPAR 71 81358

FPAR 72 83508

FPAR 73 63163

FPAR 74 57144

FPAR 75 67947

FPAR 76 71032

FPAR 77 57395

FPAR 78 54736

FPAR 79 57421

FPAR 80 49205

FPAR 81 48783

FPAR 82 46517

FPAR 83 46295

FPAR 84 54878

FPAR 85 67558

FPAR 86 84116

FPAR 87 105499

FPAR 88 117031

FPAR 89 126092

FPAR 90 118021

FPAR 91 96499

FPAR 92 86450

FPAR 93 79590

FPAR 94 55246

FPAR 95 18251

FPAR 96 7145

FPAR 97 1123

FPAR 98 783

FPAR 99 683

FPAR 100 5317

COMPOSITING LAI FREQUENCIES

LAI 0 1008

LAI 1 13033

LAI 2 17180

LAI 3 27039

LAI 4 22848

LAI 5 63843

LAI 6 62917

LAI 7 121344

LAI 8 89928

LAI 9 92297

LAI 10 149146

LAI 11 148607

LAI 12 138266

LAI 13 117611

LAI 14 162665

LAI 15 146102

LAI 16 158766

LAI 17 149794

LAI 18 95803

LAI 19 127467

LAI 20 109263

LAI 21 111753

LAI 22 84622

LAI 23 90822

LAI 24 81726

LAI 25 73026

LAI 26 63194

LAI 27 66078

LAI 28 61754

LAI 29 52166

LAI 30 49058

LAI 31 45985

LAI 32 42197

LAI 33 36381

LAI 34 34301

LAI 35 31383

LAI 36 31215

LAI 37 30966

LAI 38 26836

LAI 39 23593

LAI 40 21363

LAI 41 20504

LAI 42 22846

LAI 43 34704

LAI 44 58305

LAI 45 64849

LAI 46 69561

LAI 47 67946

LAI 48 62262

LAI 49 62738

LAI 50 55819

LAI 51 48400

LAI 52 45200

LAI 53 38263

LAI 54 35313

LAI 55 32672

LAI 56 27828

LAI 57 25073

LAI 58 21849

LAI 59 18137

LAI 60 18413

LAI 61 14784

LAI 62 15893

LAI 63 12388

LAI 64 12037

LAI 65 11905

LAI 66 12967

LAI 67 9478

LAI 68 9974

LAI 69 672

LAI 70 5150

COMPOSITING DAY INDEX FREQUENCIES

TILE-INDEX 0 Selection Frequency: 515436

TILE-INDEX 1 Selection Frequency: 763441

TILE-INDEX 2 Selection Frequency: 565080

TILE-INDEX 3 Selection Frequency: 554506

TILE-INDEX 4 Selection Frequency: 322479

TILE-INDEX 5 Selection Frequency: 610548

TILE-INDEX 6 Selection Frequency: 324583

TILE-INDEX 7 Selection Frequency: 353203

TILE-INDEX 8 Selection Frequency: 0

TILE-INDEX 9 Selection Frequency: 0

TILE-INDEX 10 Selection Frequency: 0

TILE-INDEX 11 Selection Frequency: 0

TILE-INDEX 12 Selection Frequency: 0

TILE-INDEX 13 Selection Frequency: 0

TILE-INDEX 14 Selection Frequency: 0

TILE-INDEX 15 Selection Frequency: 0

LOCALGRANULEID [MOD15A2H.A2002225.h18v04.006.2015150063613.hdf]

ECS QC PERCENT N valid (demominator) : 4009276.000000

ECS Total Pixels (denominator) : 5760000

QAPERCENTxx PSA BEFORE CALC

QAPERCENTINTERPOLATEDDATA: 0

QAPERCENTMISSINGDATA : 1750724

QAPERCENTOUTOFBOUNDSDATA : 1750724

QAPERCENTCLOUDCOVER : 46600

QAPERCENTNOTPRODUCEDCLOUD: 0

QAPERCENTNOTPRODUCEDOTHER: 0

QAPERCENTGOODQUALITY : 3949290

QAPERCENTOTHERQUALITY : 1810710

QAPERCENTGOODFPAR : 3949290

QAPERCENTGOODLAI : 3949290

QAPERCENTMAINMETHOD : 3949290

QAPERCENTEMPIRICALMODEL : 59986

QAPERCENTNDAYSCOMPOSITED : 8

QAPERCENTTERRA : 4009276

QAPERCENTxx PSA AFTER CALC

QAPERCENTINTERPOLATEDDATA: 0

QAPERCENTMISSINGDATA : 30

QAPERCENTOUTOFBOUNDSDATA : 30

QAPERCENTCLOUDCOVER : 1

QAPERCENTNOTPRODUCEDCLOUD: 0

QAPERCENTNOTPRODUCEDOTHER: 0

QAPERCENTGOODQUALITY : 99

QAPERCENTOTHERQUALITY : 100

QAPERCENTGOODFPAR : 99

QAPERCENTGOODLAI : 99

QAPERCENTMAINMETHOD : 99

QAPERCENTEMPIRICALMODEL : 1

QAPERCENTNDAYSCOMPOSITED : 8

SESSION ENGINEERING SUMMARY FOR PGE34 8-day FPAR,LAI

UM\_VERSION U.MONTANA MODIS PGE34 Vers 5.0.4 Rev 4 Release 10.18.2006 23:59

Candidate Days: 8

N. invalid loads : 0

Pixels failing best day : 1750724

Pixels set to fill : 0

Pixels skipped (disqual): 14040496

Unclassified Pixels : 1750724

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002225.h18v04.006.2015149211053.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002226.h18v04.006.2015149210349.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002227.h18v04.006.2015149224002.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002228.h18v04.006.2015149225059.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002229.h18v04.006.2015149233609.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002230.h18v04.006.2015150002942.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002231.h18v04.006.2015150040651.hdf

MOD15A1 DAILY Input: /MODAPSops7/archive/f5673/running/AM1M\_C6\_64\_L10m/39040247/MOD15A1H.A2002232.h18v04.006.2015150054948.hdf

PGE34 Output : /MODAPSx/archive/f5673/ops7/running/AM1M\_C6\_64\_L10m/39040247/MOD15A2H.6.2002-225T00:00:00.000000Z.51018004.83507639.215236\_1.hdf

MOD15A2 ANCILLARY : /MODAPSops7/PGE/AM1M/coeff/PGE34/MOD15A2\_ANC\_RI4.hdf

QAPERCENTxx PSA AFTER CALC

QAPERCENTINTERPOLATEDDATA: 0

QAPERCENTMISSINGDATA : 30

QAPERCENTOUTOFBOUNDSDATA : 30

QAPERCENTCLOUDCOVER : 1

QAPERCENTTERRA : 100

QAPERCENTGOODQUALITY : 99

QAPERCENTOTHERQUALITY : 100

QAPERCENTGOODFPAR : 99

QAPERCENTGOODLAI : 99

QAPERCENTMAINMETHOD : 99

QAPERCENTEMPIRICALMODEL : 1

QAPERCENTNDAYSCOMPOSITED : 8

Started Sat May 30 02:35:35 2015 Ended Sat May 30 02:36:13 2015

Elapsed Time 38 Sec ( 0.63 Min)

EXCLUSIONGRINGFLAG.1=N

GEOANYABNORMAL=False

GEOESTMAXRMSERROR=50.0

GLOBALGRIDCOLUMNS500M=86400

GLOBALGRIDROWS500M=43200

GRANULEBEGINNINGDATETIME=2015-05-29T21:10:53.000Z

GRANULEDAYNIGHTFLAG=Day

GRANULEENDINGDATETIME=2015-05-29T21:10:53.000Z

GRINGPOINTLATITUDE.1=39.8197706210566, 50.0069689864989, 49.9989721995752, 39.8144150819193

GRINGPOINTLONGITUDE.1=0.000131401253181314, -0.00867479214979005, 15.5723926647109, 13.0379032886097

GRINGPOINTSEQUENCENO.1=1, 2, 3, 4

HDFEOSVersion=HDFEOS\_V2.17

HORIZONTALTILENUMBER=18

identifier\_product\_doi=10.5067/MODIS/MOD15A2H.006

identifier\_product\_doi=10.5067/MODIS/MOD15A2H.006

identifier\_product\_doi\_authority=http://dx.doi.org

identifier\_product\_doi\_authority=http://dx.doi.org

INPUTPOINTER=MOD15A1H.A2002232.h18v04.006.2015150054948.hdf, MOD15A1H.A2002231.h18v04.006.2015150040651.hdf, MOD15A1H.A2002230.h18v04.006.2015150002942.hdf, MOD15A1H.A2002229.h18v04.006.2015149233609.hdf, MOD15A1H.A2002228.h18v04.006.2015149225059.hdf, MOD15A1H.A2002227.h18v04.006.2015149224002.hdf, MOD15A1H.A2002226.h18v04.006.2015149210349.hdf, MOD15A1H.A2002225.h18v04.006.2015149211053.hdf, MOD15A2\_ANC\_RI4.hdf

LOCALGRANULEID=MOD15A2H.A2002225.h18v04.006.2015150063613.hdf

LOCALVERSIONID=5.0.4

LONGNAME=MODIS/Terra Leaf Area Index/FPAR 8-Day L4 Global 500m SIN Grid

MAXIMUMOBSERVATIONS500M=1

MOD15A1\_ANC\_BUILD\_CERT=mtAncUtil v. 1.8 Rel. 09.11.2000 17:36 API v. 2.5.6 release 09.14.2000 16:33 Rev.Index 102 (J.Glassy)

MOD15A2\_FILLVALUE\_DOC=MOD15A2 FILL VALUE LEGEND

255 = \_Fillvalue, assigned when:

\* the MOD09GA suf. reflectance for channel VIS, NIR was assigned its \_Fillvalue, or

\* land cover pixel itself was assigned \_Fillvalus 255 or 254.

254 = land cover assigned as perennial salt or inland fresh water.

253 = land cover assigned as barren, sparse vegetation (rock, tundra, desert.)

252 = land cover assigned as perennial snow, ice.

251 = land cover assigned as "permanent" wetlands/inundated marshlands.

250 = land cover assigned as urban/built-up.

249 = land cover assigned as "unclassified" or not able to determine.

MOD15A2\_FparExtra\_QC\_DOC=

FparExtra\_QC 6 BITFIELDS IN 8 BITWORD

LANDSEA PASS-THROUGH START 0 END 1 VALIDS 4

LANDSEA 00 = 0 LAND AggrQC(3,5)values{001}

LANDSEA 01 = 1 SHORE AggrQC(3,5)values{000,010,100}

LANDSEA 10 = 2 FRESHWATER AggrQC(3,5)values{011,101}

LANDSEA 11 = 3 OCEAN AggrQC(3,5)values{110,111}

SNOW\_ICE (from Aggregate\_QC bits) START 2 END 2 VALIDS 2

SNOW\_ICE 0 = No snow/ice detected

SNOW\_ICE 1 = Snow/ice were detected

AEROSOL START 3 END 3 VALIDS 2

AEROSOL 0 = No or low atmospheric aerosol levels detected

AEROSOL 1 = Average or high aerosol levels detected

CIRRUS (from Aggregate\_QC bits {8,9} ) START 4 END 4 VALIDS 2

CIRRUS 0 = No cirrus detected

CIRRUS 1 = Cirrus was detected

INTERNAL\_CLOUD\_MASK START 5 END 5 VALIDS 2

INTERNAL\_CLOUD\_MASK 0 = No clouds

INTERNAL\_CLOUD\_MASK 1 = Clouds were detected

CLOUD\_SHADOW START 6 END 6 VALIDS 2

CLOUD\_SHADOW 0 = No cloud shadow detected

CLOUD\_SHADOW 1 = Cloud shadow detected

SCF\_BIOME\_MASK START 7 END 7 VALIDS 2

SCF\_BIOME\_MASK 0 = Biome outside interval <1,4>

SCF\_BIOME\_MASK 1 = Biome in interval <1,4>

MOD15A2\_FparLai\_QC\_DOC=

FparLai\_QC 5 BITFIELDS IN 8 BITWORD

MODLAND\_QC START 0 END 0 VALIDS 2

MODLAND\_QC 0 = Good Quality (main algorithm with or without saturation)

MODLAND\_QC 1 = Other Quality (back-up algorithm or fill value)

SENSOR START 1 END 1 VALIDS 2

SENSOR 0 = Terra

SENSOR 1 = Aqua

DEADDETECTOR START 2 END 2 VALIDS 2

DEADDETECTOR 0 = Detectors apparently fine for up to 50% of channels 1,2

DEADDETECTOR 1 = Dead detectors caused >50% adjacent detector retrieval

CLOUDSTATE START 3 END 4 VALIDS 4 (this inherited from Aggregate\_QC bits {0,1} cloud state)

CLOUDSTATE 00 = 0 Significant clouds NOT present (clear)

CLOUDSTATE 01 = 1 Significant clouds WERE present

CLOUDSTATE 10 = 2 Mixed cloud present on pixel

CLOUDSTATE 11 = 3 Cloud state not defined,assumed clear

SCF\_QC START 5 END 7 VALIDS 5

SCF\_QC 000=0 Main (RT) algorithm used, best result possible (no saturation)

SCF\_QC 001=1 Main (RT) algorithm used, saturation occured. Good, very usable.

SCF\_QC 010=2 Main algorithm failed due to bad geometry, empirical algorithm used

SCF\_QC 011=3 Main algorithm faild due to problems other than geometry, empirical algorithm used

SCF\_QC 100=4 Pixel not produced at all, value coudn't be retrieved (possible reasons: bad L1B data, unusable MOD09GA data)

MOD15A2\_StdDev\_QC\_DOC=MOD15A2 STANDARD DEVIATION FILL VALUE LEGEND

255 = \_Fillvalue, assigned when:

\* the MOD09GA suf. reflectance for channel VIS, NIR was assigned its \_Fillvalue, or

\* land cover pixel itself was assigned \_Fillvalus 255 or 254.

254 = land cover assigned as perennial salt or inland fresh water.

253 = land cover assigned as barren, sparse vegetation (rock, tundra, desert.)

252 = land cover assigned as perennial snow, ice.

251 = land cover assigned as "permanent" wetlands/inundated marshlands.

250 = land cover assigned as urban/built-up.

249 = land cover assigned as "unclassified" or not able to determine.

248 = no standard deviation available, pixel produced using backup method.

NADIRDATARESOLUTION500M=500m

NDAYS\_COMPOSITED=8

NORTHBOUNDINGCOORDINATE=49.9999999955098

NUMBEROFGRANULES=1

PARAMETERNAME.1=MODPR15A2H

PGEVERSION=6.0.6

PROCESSINGCENTER=MODAPS

PROCESSINGENVIRONMENT=Linux minion5673 2.6.18-404.el5 #1 SMP Tue Apr 7 12:42:54 EDT 2015 x86\_64 x86\_64 x86\_64 GNU/Linux

PRODUCTIONDATETIME=2015-05-30T06:36:13.000Z

QAPERCENTCLOUDCOVER.1=1

QAPERCENTEMPIRICALMODEL=1

QAPERCENTGOODFPAR=99

QAPERCENTGOODLAI=99

QAPERCENTGOODQUALITY=99

QAPERCENTINTERPOLATEDDATA.1=0

QAPERCENTMAINMETHOD=99

QAPERCENTMISSINGDATA.1=30

QAPERCENTOTHERQUALITY=100

QAPERCENTOUTOFBOUNDSDATA.1=30

RANGEBEGINNINGDATE=2002-08-13

RANGEBEGINNINGTIME=00:00:00

RANGEENDINGDATE=2002-08-20

RANGEENDINGTIME=23:59:59

REPROCESSINGACTUAL=reprocessed

REPROCESSINGPLANNED=further update is anticipated

SCIENCEQUALITYFLAG.1=Not Investigated

SCIENCEQUALITYFLAGEXPLANATION.1=See http://landweb.nascom/nasa.gov/cgi-bin/QA\_WWW/qaFlagPage.cgi?sat=terra the product Science Quality status.

SHORTNAME=MOD15A2H

SOUTHBOUNDINGCOORDINATE=39.9999999964079

SPSOPARAMETERS=5367, 2680

SYSTEMFILENAME=MOD15A1H.A2002232.h18v04.006.2015150054948.hdf, MOD15A1H.A2002231.h18v04.006.2015150040651.hdf, MOD15A1H.A2002230.h18v04.006.2015150002942.hdf, MOD15A1H.A2002229.h18v04.006.2015149233609.hdf, MOD15A1H.A2002228.h18v04.006.2015149225059.hdf, MOD15A1H.A2002227.h18v04.006.2015149224002.hdf, MOD15A1H.A2002226.h18v04.006.2015149210349.hdf, MOD15A1H.A2002225.h18v04.006.2015149211053.hdf

TileID=51018004

UM\_VERSION=U.MONTANA MODIS PGE34 Vers 5.0.4 Rev 4 Release 10.18.2006 23:59

VERSIONID=6

VERTICALTILENUMBER=04

WESTBOUNDINGCOORDINATE=0.0

Subdatasets:

SUBDATASET\_1\_NAME=HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:Fpar\_500m

SUBDATASET\_1\_DESC=[2400x2400] Fpar\_500m MOD\_Grid\_MOD15A2H (8-bit unsigned integer)

SUBDATASET\_2\_NAME=HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:Lai\_500m

SUBDATASET\_2\_DESC=[2400x2400] Lai\_500m MOD\_Grid\_MOD15A2H (8-bit unsigned integer)

SUBDATASET\_3\_NAME=HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:FparLai\_QC

SUBDATASET\_3\_DESC=[2400x2400] FparLai\_QC MOD\_Grid\_MOD15A2H (8-bit unsigned integer)

SUBDATASET\_4\_NAME=HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:FparExtra\_QC

SUBDATASET\_4\_DESC=[2400x2400] FparExtra\_QC MOD\_Grid\_MOD15A2H (8-bit unsigned integer)

SUBDATASET\_5\_NAME=HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:FparStdDev\_500m

SUBDATASET\_5\_DESC=[2400x2400] FparStdDev\_500m MOD\_Grid\_MOD15A2H (8-bit unsigned integer)

SUBDATASET\_6\_NAME=HDF4\_EOS:EOS\_GRID:"MOD15A2H.A2002225.h18v04.006.2015150063613.hdf":MOD\_Grid\_MOD15A2H:LaiStdDev\_500m

SUBDATASET\_6\_DESC=[2400x2400] LaiStdDev\_500m MOD\_Grid\_MOD15A2H (8-bit unsigned integer)

Corner Coordinates:

Upper Left ( 0.0, 0.0)

Lower Left ( 0.0, 512.0)

Upper Right ( 512.0, 0.0)

Lower Right ( 512.0, 512.0)

Center ( 256.0, 256.0)