Photogrammetry Notes and Observations

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Contents

Common Variables

- H - Height of the camera above ground, *Flying Height*

- B - Distance between two image, *Air Base*

Common Programs and Usage Notes

This section is dedicated to solving easy problems using common programs.

GDAL Binaries

Many of the included gdal programs can be installed using a package manager.

Ubuntu sudo apt-get install gdal-bin

gdalinfo

Description

gdalinfo is an application bundled with GDAL which provides the user with the ability to extract information about a particular geographic file to the console.

This application works on elevation information, vector files (KML, KMZ), imagery (NITF), and many more.

Information Provided

- Corner Coordinates

- Geographic Projection Used

- Image Raster Datatype

- Date Taken

- more Metadata and image info

Usage

```
./gdalinfo  data/dted/w119/n036.dt2

Driver: DTED/DTED Elevation Raster
Files: data/dted/w119/n036.dt2
```

```
Size is 3601, 3601
Coordinate System is:
GEOGCS["WGS 84",
    DATUM["WGS_1984",
        SPHEROID["WGS 84",6378137,298.257223563]],
    PRIMEM["Greenwich",0],
    UNIT["degree",0.0174532925199433],
    AUTHORITY["EPSG","4326"]]
Origin = (-119.000138888888884,37.000138888888884)
Pixel Size = (0.000277777777778,-0.000277777777778)
Metadata:
  DTED_VerticalAccuracy_UHL=0007
  DTED_VerticalAccuracy_ACC=0007
  DTED_SecurityCode_UHL=U
  DTED_SecurityCode_DSI=U
  DTED_UniqueRef_UHL=G18 063
  DTED_UniqueRef_DSI=G18 063
  DTED_DataEdition=02
  DTED_MatchMergeVersion=A
  DTED_MaintenanceDate=0000
  DTED_MatchMergeDate=0000
  DTED_MaintenanceDescription=0000
  DTED_Producer=USCNIMA
  DTED_VerticalDatum=E96
  DTED_HorizontalDatum=WGS84
  DTED_DigitizingSystem=SRTM
  DTED_CompilationDate=0002
  DTED_HorizontalAccuracy=0013
  DTED_RelHorizontalAccuracy=NA
  DTED_RelVerticalAccuracy=0009
  AREA_OR_POINT=Point
Corner Coordinates:
Upper Left  (-119.0001389,  37.0001389) (119d 0'0.50"W, 37d 0'0.50"N)
Lower Left  (-119.0001389,  35.9998611) (119d 0'0.50"W, 35d59'59.50"N)
Upper Right (-117.9998611,  37.0001389) (117d59'59.50"W, 37d 0'0.50"N)
Lower Right (-117.9998611,  35.9998611) (117d59'59.50"W, 35d59'59.50"N)
Center      (-118.5000000,  36.5000000) (118d30'0.00"W, 36d30'0.00"N)
Band 1 Block=1x3601 Type=Int16, ColorInterp=Undefined
  NoData Value=-32767
  Unit Type: m
```

Camera Calibration Notes

Intrinsic Parameters

Common Intrinsic Camera Parameters

- Focal Length (f)

- Radial Distortion

Bibliography

[1] Bon A. DeWitt and Paul R. Wolf. *Elements of Photogrammetry(with Applications in GIS)*. McGraw-Hill Higher Education, 3rd edition, 2000.

Index