

1K 90M 30M dem 10M dem 3M Lidar 1M 0.3M
 30AS 3AS 1AS 1/3 AS 1/9 AS 1/27AS 1/81 AS
 2011 real-time kinematic GPS systems: about 20 mm and vertically accurate to about 30–40 mm.

Name	NED National Elevation Dataset, floatn38w092_1.flt
1 file or Set or Series	Series with header file, actually a Lot of files
Cellsize	1AS: 0.0002777777777778 DD , 1/3AS: 0.000092592592593 DD
File Size	1AS, 1/3AS: 1 degree tiles; 1/9 AS area ArcInfo coverage
Coverage	USA, 1AS: 65Gig, 1/3 AS 450Gig
Cell or Grid Centered	pixel centered : Cell UL Corner, Grid would be LL Center
Lower Left Index or	UL, 6 pixel overlap on all sides
XLL Cell Corner or GC	corner depends per area
YLL	corner depends per area
Data type Int, Flt	32-bit FP binary, external header, GridFloat.flt
Intel LSB or MSB	MSBFIRST
Projection	Geo coords
Spheroid	
Datum	NAD 1983, NAVD 1988 vertical
Zunits	Meters
Units	DD Decimal Degrees
Ncols	1AS: 3612, 1/3AS: 10812
Nrows	1AS: 3612, 1/3AS: 10812
Nodata_value	-9999
Min_value	depends per area
Max_value	depends per area
	files have 6 pixel overlap on ALL sides: Tileable: 3600 , 10800

? 1/9 AS 3M ... ArcInfo
 0.000092592592593 1/3 AS 10M
 0.0002777777777778 1AS 30M
 0.000833333333 3AS 90M
 0.00833333333 .5 Minute 30AS
 0.01666666667 1M
 0.03333333333 2 Minute
 0.0833333333 5 Minute

Name	ASTER GDEM
1 file or Set or Series	SET: 22,600 data tiles
Cellsize 1/3AS ..30AS	1AS : 30 Meters: 0.000277777777778 decimal degree
File Size	1 degree tiles available ONLY as geotif files
Coverage	North 83 degrees to South 83 degrees
Cell or Grid Centered	
Lower Left Index or	
XLL Center or Corner	
YLL	
Data type Int, Flt	geotif
Intel LSB or MSB	
Projection	
Spheroid	
Datum	
Zunits	
Units	0.017453292519943295
Ncols	3601
Nrows	3601
Nodata_value	
Min_value	
Max_value	

Name	SRTM3 V4 , CGIAR-CSI
1 file or Set or Series	Set: 872 (?873?) files .asc
Cellsize	3AS : 90Meters : 0.000833333333 decimal degree
File Size	5 degree tiles, 5 line header IN the file
Coverage	N+S- 60 Degrees 432000x144000
Cell or Grid Centered	360x120 degrees
Lower Left Index or	LL corner of LL pixel
XLL Center or Corner	
YLL	
Data type Int, Flt	
Intel LSB or MSB	Arc Ascii
Projection	
Spheroid	
Datum	WGS 84
Zunits	Meters
Units	DD
Ncols	6000 ... Some have 6001..some have 6000 !!!
Nrows	6000
Nodata_value	-9999 (-32768 for tif)
Min_value	
Max_value	
	5 line header
	49.999584 = 50-1/2 pixel : 50-0.000416 degree

ncol, nrow:Integer; xllcorner, yllcorner : Real; cellsize: Real; Nodata:Real (optional)

Name	USGS Global 30 GTOPO30
1 file or Set or Series	Set: 33 tiles
Cellsize	30AS : 1Kilometer, (0.0083333333333333 degrees)
File Size	size varies
Coverage	Global : 21,600 rows and 43,200 columns
Cell or Grid Centered	Cell
Lower Left Index or	UL name for tiles in the Set
XLL Center or Corner	
YLL	
Data type Int, Flt	16 bit signed integer, Binary raster data
Intel LSB or MSB	MSB
Projection	Geo
Spheroid	WGS 84
Datum	
Zunits	Meters
Units	DD
Ncols	4,800 wide x 6,000 rows
Nrows	6 Ant tiles : 7,200 x 3,600 rows
Nodata_value	-9999 : Oceans
Min_value	-407
Max_value	8,752
	antarcps is Polar
	Just run the .tpcfg to make a htf

Name	Scripps SRTM30_PLUS V6.0 - November 28, 2009
1 file or Set or Series	Set: 33 tiles .. similar to Gtopo
Cellsize	30AS : 1Kilometer, (0.0083333333333333 degrees)
File Size	size varies
Coverage	Global : 21,600 rows and 43,200 columns
Cell or Grid Centered	Cell
Lower Left Index or	UL name for tiles in the Set
XLL Center or Corner	
YLL	
Data type Int, Flt	16 bit signed integer, Binary raster data
Intel LSB or MSB	MSB
Projection	Geo
Spheroid	WGS 84
Datum	
Zunits	Meters
Units	DD
Ncols	4,800 wide x 6,000 rows
Nrows	6 Ant tiles :7,200 x 3,600 rows
Nodata_value	-9999 : Oceans ?
Min_value	?
Max_value	?
	Ocean data: based on Smith and Sandwell with higher resolution
	Land data: USGS SRTM30 and Gtopo30
	Just run the .tpcfg to make a htf

Name	NOAA Globe
1 file or Set or Series	Set: 16 files : a..p
Cellsize	30AS: 1Kilometer
File Size	
Coverage	Global : 21,600 rows and 43,200 columns
Cell or Grid Centered	
Lower Left Index or	
XLL Center or Corner	
YLL	
Data type Int, Flt	16 Bit Integer, Binary raster data
Intel LSB or MSB	LSB
Projection	
Spheroid	
Datum	
Zunits	Meters
Units	
Ncols	10800 across
Nrows	4800 or 6000 tall , E..L:6000, ABCDMNOP: 4800
Nodata_value	-500 for oceans
Min_value	-407 (both in tile G)
Max_value	8752
	Just run the .tpcfg to make a htf

Name	NOAA Etopo1
1 file or Set or Series	1 file
Cellsize	1 Arc Minute ~1.8 Kilometer : 0.01666666667
File Size	etopo1_bed_g_i2.bin 455M
Coverage	Global: 21600 x 10800 Cell, 21601x10801 Grid
Cell or Grid Centered	Grid is Reference
Lower Left Index or	LLCenter Grid, LL Corner Cell
XLL Center or Corner	
YLL	
Data type Int, Flt	16 bit Integer, Binary raster data
Intel LSB or MSB	LSB
Projection	
Spheroid	
Datum	
Zunits	Meters
Units	
Ncols	21600 x 10800 Cell, 21601x10801 Grid
Nrows	21600 x 10800 Cell, 21601x10801 Grid
Nodata_value	-99999 flt or -32768 integer
Min_value	-10898 Grid , -10803 Cell
Max_value	8271 Grid , 8333 Cell
	no internal header - just data
	Just run the .tpcfg to make a htf

Name	NOAA Etopo2
1 file or Set or Series	1 file : ETOPO2v2c_i2_LSB.bin : 114M
Cellsize	2 Arc Minute : 4K ? : 0.033333333333
File Size	
Coverage	Global: 10800 x 5400
Cell or Grid Centered	Cell is Reference
Lower Left Index or	LL Corner
XLL Center or Corner	
YLL	
Data type Int, Flt	16 bit Integer, Binary raster data
Intel LSB or MSB	LSB
Projection	
Spheroid	
Datum	
Zunits	Meters
Units	
Ncols	
Nrows	
Nodata_value	-32768
Min_value	-10791
Max_value	8440
	Just run the .tpcfg to make a htf

Name	NOAA Etopo5
1 file or Set or Series	1 file : ETOPO5.DOS 18M
Cellsize	5 Arc Minute : ? Kilometer, 0.083333333
File Size	360x180
Coverage	Global: 2160x4320
Cell or Grid Centered	Cell Centered
Lower Left Index or	LL Corner
XLL Center or Corner	
YLL	
Data type Int, Flt	16 bit Integer, Binary raster data
Intel LSB or MSB	LSB
Projection	Geo
Spheroid	
Datum	
Zunits	Meters
Units	
Ncols	
Nrows	
Nodata_value	All data .. Ocean Floors
Min_value	
Max_value	
	There is NO record for the South Pole (elevation 2810 m.)
	360 degrees x 12 points/degree
	Just run the .tpcfg to make a htf

	circumference of the earth : 40,075,000
1. Plan-Data coverage Grid	5 Degree 72x36
2. Plan-Data coverage Grid	1 Degree (111,319 Meters) 360x180
3. Plan-Data coverage Grid	30 ArcMin [\sim 56Km] (360x2= 720x360) (55,660M)
4. Down2/5-True Marble	(15:360x4:1440) 16Arc Minute 360x3.75= 1350.. 32km [*]
5. Down5/2-True Marble	(10:360x6: 2160) 8Arc Minute 360x7.5= 2700 16km [*]
6. Etopo5	5 Arc Minute : (9277M) , 0.083333333 , 360x12=4320x 2160
7. aka ILH World, Down2/2	4 Arc Minute 360x15=5400x2700 (7421M) [*]
8. Etopo2	2 Arc Minute 10800 x 5400, 360x30=10800 (3711Meters)[*]
9. Etopo1	1 Arc Minute \sim 1.8 Kilometer: 0.01666666667, 21600x10800 [*]
	360x60=21600 (1AM) (1855Meters)
10. Gtopo, Globe, Stopo	30AS : 43,200 x 21,600, 360x60x2= 43,200 (30AS=1/2 AM)[*]
11. Filler-Downsample /5	15AS (500M) : 360x60x4=86400 x 43,200 [*]
12. Filler-Downsample /2	6AS : (180 Meters): 360x60x10 = 216,000x108,000 [*-not]
13. SRTM	3AS : 90Meters: 360x60x20 = 432000x216,000 (?144000?+-84)
14. NED-ASTER	1AS : 30 Meters: [52M x3x3= \sim 450] 360x60x60 =1,296,000
15. NED	1/3AS (0.3): 10 Meters: [455M]: 360x60x60x3 =3,888,000
16. NED	1/9AS (0.1): 3 Meters:: 360x60x60x9 =11,664,000
17.	1/27AS (0.037): 1 Meter:: 360x60x60x27= 34,992,000
18.	1/81 AS (0.0123)[0.3 Meter] ; 360x60x60x81= 104,976,000
19.	1/243 AS(0.004) [3 cm] ; 360x60x60x243=314,928,000
20.	1/729 AS (0.0014)[1 cm] ; 360x60x60x729=944,784,000
	2km 21600, 4km 10800 , 8km 5400, 16km 2700, 32km 1350

[*] True Marble Image

The circumference of the earth at the equator is 24,901.55 miles (40,075.16 kilometers).
Highest Elevation on Earth - Mt. Everest, Asia: 29,035 feet (8850 m)
Lowest Elevation on Land - Dead Sea: 1369 feet below sea level (417.27 m)
Deepest Point in the Ocean - Challenger Deep, Mariana Trench, Western Pacific Ocean: 35,840 feet (10924 m)

NAD 83 knowledge of earth center is +/- 2 meters.

WGS 84 (G873) +/- 10 cm as of 1994

Therefore, the "absolute" difference between points in NAD 83 and WGS 84 are approximately 2 meters.