

Expedition Planning Resources

US Geological Survey

1. **Home Page:** <http://www.usgs.gov/>
2. **USGS Store:** [http://store.usgs.gov/b2c_usgs/b2c/start/\(xcm=r3standardpitrex_prd\)/.do](http://store.usgs.gov/b2c_usgs/b2c/start/(xcm=r3standardpitrex_prd)/.do)
3. **Topo Map Locator:**
[http://store.usgs.gov/b2c_usgs/usgs/maplocator/\(ctype=areaDetails&xcm=r3standardpitrex_prd&carea=%24ROOT&layout=6_1_61_48&uiarea=2\)/.do](http://store.usgs.gov/b2c_usgs/usgs/maplocator/(ctype=areaDetails&xcm=r3standardpitrex_prd&carea=%24ROOT&layout=6_1_61_48&uiarea=2)/.do)
4. **Publication Home Page (topos and aerial photos):** <http://www.usgs.gov/pubprod/>
5. **The National Map:** <http://nationalmap.gov/>
6. **Information on US Topos:** <http://nationalmap.gov/ustopo/index.html>
7. **Aerial and Satellite Images:** <http://www.usgs.gov/pubprod/aerial.html> - aerial
8. **Earthexplorer (find aerial photos):** <http://earthexplorer.usgs.gov/>
9. **Types of Available Aerial Photos:** <http://eros.usgs.gov/aerial-photography>
10. **Descriptuion of National Aerial Photography Project (NAPP):**
<https://lta.cr.usgs.gov/NAPP>

National Park Service

1. **Home Page:** <http://www.nps.gov/index.htm>

Bureau of Land Management

1. **National Monuments:**
http://www.blm.gov/wo/st/en/prog/blm_special_areas/NLCS/monuments.html
2. **Recreational Opportunities:** <http://www.recreation.gov/unifSearch.do>
3. **Special Areas:** http://www.blm.gov/wo/st/en/prog/blm_special_areas/NLCS.html
4. **Wilderness Areas:**
http://www.blm.gov/wo/st/en/prog/blm_special_areas/NLCS/Wilderness.html
5. **Flickr:** <https://www.flickr.com/photos/mypubliclands/sets/>
6. **National Conservation Lands Home Page:**
<http://www.blm.gov/wo/st/en/prog/nlcs.html>

US Forest Service

1. **Home Page:** <http://www.fs.fed.us/>
2. **National Forest Locator Map:** <http://www.fs.fed.us/locatormap/>

Stars

1. **EarthSky:** <http://earthsky.org/>
2. **Clear Sky Charts:** <http://cleardarksky.com/csk/>
3. **StarDate (University of Texas McDonald Observatory):** <https://stardate.org/>
4. **Finding the Milky Way:** <http://www.lonelyspeck.com/how-to-find-the-milky-way/>

5. **Finding the Milky Way:** <http://starcircleacademy.com/2012/06/milkyway/>
6. **Using PhotoPills to Find the Milky Way:** <http://www.photopills.com/articles/how-plan-milky-way-using-augmented-reality>

Sun and Moon

1. **Photo Ephemeris:** <http://app.photoephemeris.com/>
2. **Best Book on Sun/Moon Light:** <http://www.brucepercy.co.uk/e-books-technique/>
3. **Moon Phase Calendar:**
http://www.moonconnection.com/moon_phases_calendar.phtml
4. **Understanding Moon Phases:** http://www.moonconnection.com/moon_phases.phtml
5. **Moon Phases:** <https://stardate.org/nightsky/moon>
6. **Sunrise and Sunset:** <http://www.sunrisesunset.com/> (monthly calendar for sunrise, sunset, civil twilight, nautical twilight, astronomical twilight, moonrise, and moonset)
7. **Twilight Calculator:** <http://jekophoto.eu/tools/twilight-calculator-blue-hour-golden-hour/index.php>

Time and Date

1. **Time and Date:** <http://www.timeanddate.com/> (sun and moon calculations as well as time)

GPS and Map Skills and Supplies

1. **UTM System:** <https://www.uwgb.edu/dutchs/FieldMethods/UTMSystem.htm> (good explanation of UTM system)
2. **Official US GPS Website:** www.gps.gov
- 3.
4. **Google Earth Pro:** <http://www.google.com/earth/download/gep/agree.html> (Google Earth Pro requires a license key but is free. If you do not have a key, use your email address and the key **GEPFREE** to sign in.)
5. **EarthPoint:** <http://earthpoint.us/Convert.aspx> (conversion from lat/long to UTM coordinates)
6. **US Naval Observatory Astronomical Applications:**
<http://www.usno.navy.mil/USNO/astronomical-applications>
7. **US Naval Observatory-Azimuth and Altitude for One Day:**
<http://aa.usno.navy.mil/data/docs/AltAz.php>

Weather

1. **The Weather Channel:** <http://www.weather.com/>
2. **Weather Underground:** <http://www.weatherunderground.com/>
3. **US Climate Data (average temperatures and rainfall):** <http://www.usclimatedata.com>

Apps for Your iPhone and Android Phone

1. Dark Sky (weather forecast)
2. Weather Bug (weather forecast)
3. Weather Underground (weather forecast)
4. iCSC (clear sky forecast)
5. LightTrac (sun and moon calculator)
6. PhotoPills (sun, moon, and photo calculator)
7. PlanIt! (photography planning app)
8. TPE (sun and moon calculator)
9. Simple Tides (tide forecast)
10. Sky Guide (star guide)
11. SkyView (star guide)
12. Theodolite (camera app with geo data recorded on the image)
13. Pro Compass
14. GPS Kit
15. Sun Surveyor

Apps for Your PC/Mac

1. **Starry Night:** <http://astronomy.starrynight.com/>
2. **Stellarium:** <http://www.stellarium.org/>

Books

1. **Be Expert with Map and Compass:** http://www.amazon.com/Expert-Map-Compass-Bjorn-Kjellstrom/dp/0470407654/ref=sr_1_10?s=books&ie=UTF8&qid=1448976434&sr=1-10&keywords=gps+navigation
2. **GPS Made Easy, 5th Ed:** http://www.amazon.com/GPS-Made-Easy-Positioning-Outdoors/dp/1594851034/ref=sr_1_4?s=books&ie=UTF8&qid=1448976434&sr=1-4&keywords=gps+navigation
3. **UTM Using your GPS with the Universal Transverse Mercator Coordinate System:** http://www.amazon.com/Universal-Transverse-Mercator-Coordinate-System/dp/0971090114/ref=pd_bxgy_14_img_3?ie=UTF8&refRID=OSBDYPJJXYAC5ZJRCZ37
4. **The Night Sky 30°-40° (Large) Star Finder:** http://www.amazon.com/Night-30%C2%B0-40%C2%B0-Large-North-Latitude/dp/0961320753/ref=sr_1_2?s=books&ie=UTF8&qid=1448976624&sr=1-2&keywords=planisphere
5. **The Night Sky 40°-50° (Large) Star Finder:** http://www.amazon.com/Night-40%C2%B0-50%C2%B0-Large-Star-Finder/dp/0961320745/ref=sr_1_1?s=books&ie=UTF8&qid=1448976624&sr=1-1&keywords=planisphere