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LEO satellites, small portable rigs, and light-weight yagi antennas have combined to call many amateurs out into the wide open spaces to put that rare grid on the air, or simply to set up in the driveway to overcome antenna restrictions. But even out in the wild, with the simplest of stations, a ham needs to have and to save certain information in order to operate. Lugging a laptop along isn't always easy or practical, and there's seldom wi-fi available in the woods. Wouldn't it be great if you could carry a tiny computer in your pocket? If you carry a smart phone, you already have one! All you need is the right app.

## Tracking

Searching for satellite apps in Google Play or Apple app stores yields several dozen variations of applications that will help point your home TV satellite dish at the proper geosynchronous point in the sky. A few more will help you spot the ISS visually as it flies overhead at dusk. There aren't many that will tell you where to point your Arrow during an SO-50 pass.

One that will is "Satellite Explorer Pro" by Thomas Doyle, W9KE. This app is available for iOS and Windows phones and tablets, and it's completely free. This is a deceptively simple-looking program, and doesn't appear very impressive at first glance. But Tom has made many improvements since the earliest version ("Satellite Explorer," which is still available for download in the iTunes store, but you'll want to go "Pro"), and there are a number of neat features hidden in the app that aren't obvious at first glance. The clean and simple interface keeps clutter out of the way, but the goodies are only a touch of the screen away - depending on which spot on the screen you touch. It might be wise to listen to him walk you through it in one of his YouTube videos, or at least to read his web page at

<http://www.tomdoyle.org/SatExpPro/SatExpPro.html> .

Satellite Explorer Pro will tell you where you are, using your phone or tablet GPS. It will calculate your grid square and put you on the map. Before you leave home, when you still have a wi-fi connection, you'll probably want to update all your Keplerian elements, which the app will do for you very quick and automatically at the touch of a button. Satellites are presented in several groups, but you can create your own group of "Favorites" for the satellites of primary interest. Among the latest additions is the ability to have the phone notify the user of an upcoming pass so that it's not missed.

Another very pretty and quite useful set of tracking apps for iOS has been created by Craig Vosburgh, WØVOS.

See: <http://www.vosworx.com/> .



The Satellite Explorer Pro home screen is clean and simple

These programs have most of the same features described above, but with an enhanced graphical interface. Craig is in business as an app developer, so except for the "Lite" version of his ISS-only tracker, his work carries a price tag. "HamSat," the version focused only on amateur satellites, is a couple bucks cheaper than "ProSat," which seems to track everything in orbit. Unfortunately, the iPhone versions do not play well with the iPad, and vice versa, so one must pay again for "HamSatHD" or "ProSatHD," which display properly on the tablet. For the money, one gets an array of beautifully rendered, real time, color displays. Spinning the 3D globe with the touch screen is fun, and the "radar screen" overflight plots are exceptionally useful during a pass. Pass predictions can be selectively passed to the Calendar, allowing more flexibility with notifications.

Android users will be able to enjoy some of the same benefits in a free app by G4DPZ called, "AmsatDroid FREE." I did not have the chance to use this app myself, but it gets high marks from reviewers in the Google Play Android app store. There's also "PocketSat3" for Android and iOS, which looks nice in the app stores, but comes at a price even higher than "ProSat" in iOS.

## Other Utilities

In addition to tracking, the smart phone or tablet can assist with a variety of other functions during a satellite pass. Perhaps you have extra hands, or are better at juggling than I, but I find it difficult to track the antenna, keep up with Doppler shift, listen to the downlink, talk, and keep a log all at once. Most phones have a built in voice memo



Satellite Explorer Pro has added notification functions

app that will make an audio recording. Start the recording at the beginning of the pass and speak the exact time for the record. With the starting time and real-time recording -- even of just one's own side of the QSO, it's easy to reconstruct a log later, even if contacts were fast and furious during the pass.

For those wishing to keep a more traditional log,



ProSatHD on the iPad provides 3D globe and overflight plot





AmsatDroid FREE map display

Android users will benefit from “Ham Radio Log” by Talixa Software, a free app that will output data in ADIF format for import into your full-function log program on your Mac or PC. Users of iOS will find utility in “HamLog” by N3WG. For only 99 cents, this app provides a veritable Swiss Army knife of radio-related tools, one of which happens to be a log program. Also included is propagation data, DX cluster access, various calculators, contest calendars, etc.

If you need filters, alarms and other features on your DX cluster, “iCluster” by DL8MRE will provide all that you need for just \$2.99. This program still has a few bugs, but Marcus is working hard to fix things. “Callsign Search” by K4FV provides access to the QRZ database for subscribers and is similar to “QRZDroid” on Android.

Because there is no standard search term for apps related to the odd assortment of things we do on the air, you’ll want to query your favorite app store for “ham radio,” “amateur radio,” “amateur satellite” and any other search combinations you can think of. When you do, you’ll find a plethora of apps related to all aspects of the hobby, from exam study guides to CW tutors to remote control of your rig. Next time you head out into the wild to catch a satellite pass, don’t go without your pocket computer and the apps that will help you get the best from the birds. 🌐

### AMSAT Fox-1 Challenge Coin Available for Donations at \$100 or Higher



AMSAT is excited to announce that a new premium collectable is now available for qualifying donations to the Fox satellite program. AMSAT has commissioned a unique challenge coin for donors who have contributed at the \$100 level or higher. This challenge coin is shaped as an isometric view of a Fox-1 cubesat, complete with details such as the stowed UHF antenna, solar cells, and camera lens viewport. Struck in 3mm thick brass plated with antique silver, and finished in bright enamel, the coin is scaled to be approximately 1:4 scale, or 1 inch along each of the six sides. The reverse has the AMSAT Fox logo.

The coins are scheduled for delivery just prior to the 2014 AMSAT Space Symposium, and will be first distributed to donors attending the Symposium. Coins will also be made available to qualifying donors that have contributed since the Fox-1C announcement on July 18, 2014 upon request.

Donations may be made via the:

- AMSAT website at <http://www.amsat.org>
- FundRazr crowdsourcing app at: <http://fnd.us/c/6pz92>
- AMSAT office at (888) 322-6728

Further information on the Fox project can be found at:

<http://www.amsat.org> .

