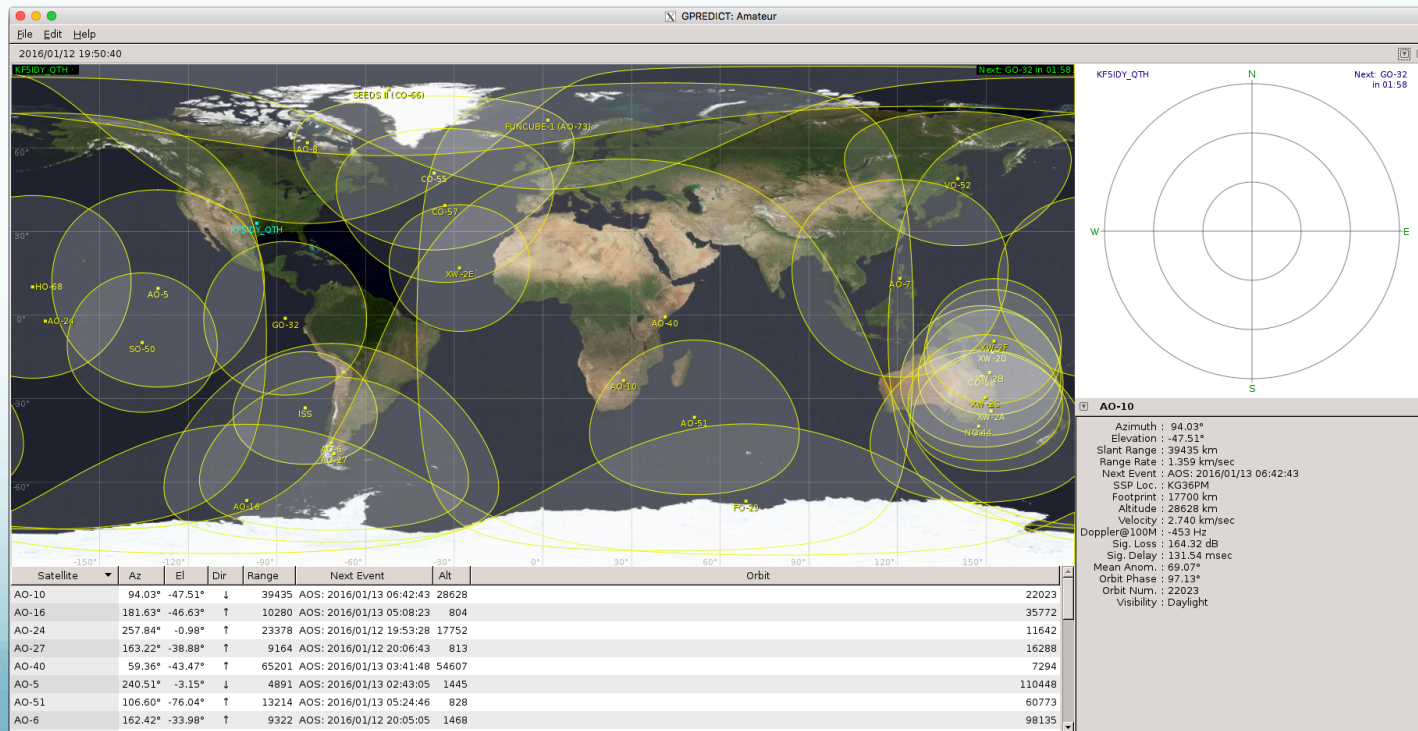


Raspberry Pi as a Satellite Tracker

Controlling the SatNOGS rotator
Jonathan Brandenburg, 01/16/2016

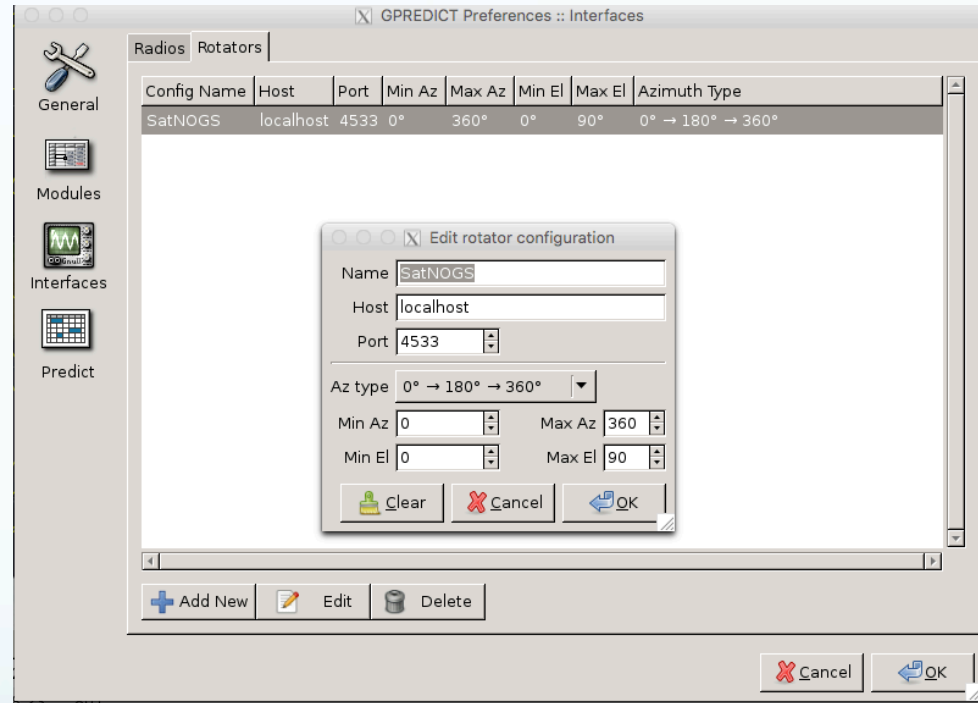
Install gpredict

- “sudo apt-get update”
- “sudo apt-get install gpredict”
- Start “gpredict”



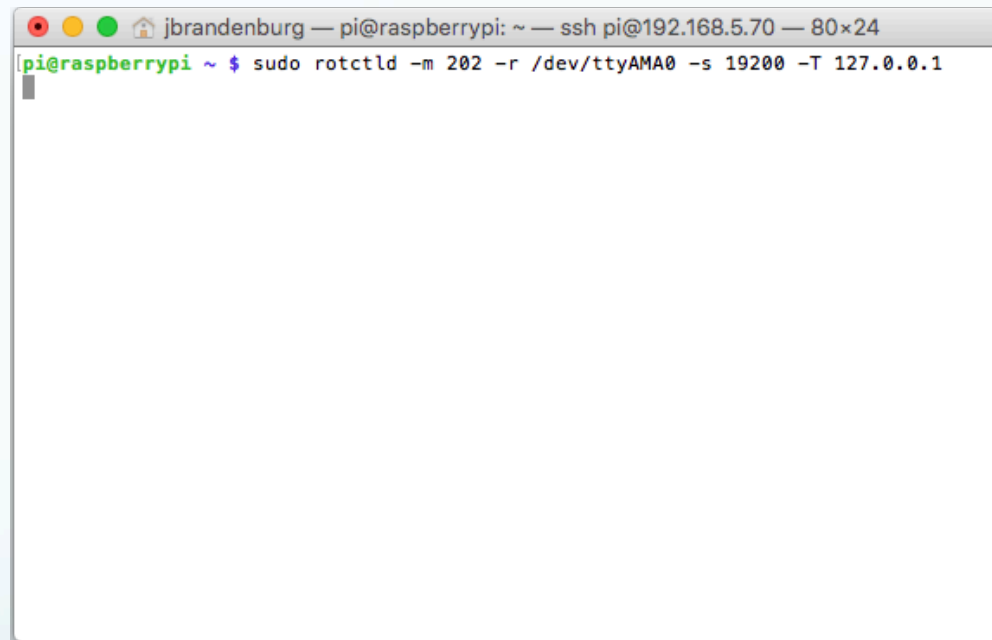
Configure gpredict Totator

- “Edit”, “Preferences”
- Select the “Interfaces” module, select the “Rotators” tab.
- Create a network-based rotator on “localhost”, port 4533
 - no physical reason maximum azimuth could not be > 360 or maximum elevation could not be > 90 .



Install the Rotator Control Software

- “sudo apt-get update”
- “sudo apt-get install libhamlib-utils”
- Start the rotator control daemon with “sudo rotctld -m 202 -r /dev/ttyACM0 -s 19200 -T 127.0.0.1”
 - -m 202 specifies a rotator compatible with “EasycommII”
 - /dev/ttyACM0 is the serial port of the Arduino. It may be different at times.



```
jbrandenburg — pi@raspberrypi: ~ — ssh pi@192.168.5.70 — 80x24
pi@raspberrypi ~ $ sudo rotctld -m 202 -r /dev/ttyAMA0 -s 19200 -T 127.0.0.1
```

Activate Tracking in gpredict

- Click the down-arrow in the “radar” window, select “Antenna Control”
- Click “Engage” beside the rotator device
- Select the desired target.
- Click “Track”

The screenshot shows the 'Gpredict Rotator Control: Amateur' window. It features several control panels:

- Azimuth:** A numeric keypad with five buttons (3, 5, 3, 3, 1) and a degree symbol. Below it, a 'Read' field shows '0.00°'.
- Elevation:** A numeric keypad with five buttons (3, 1, 0, 6) and a degree symbol. Below it, a 'Read' field shows '0.00°'.
- Target:** A dropdown menu showing 'GO-32' and a 'Track' button.
- Settings:** A 'Device' dropdown showing 'SatNOGS' with an 'Engage' button, a 'Cycle' field set to '1000' with 'msec' units, and a 'Tolerance' field set to '5.00' with 'deg' units.
- Radar:** A circular radar display with concentric circles and a central crosshair. The display is labeled 'KF5IDY_QTH' and shows a blue line representing a target's path. Time markers are visible: 20:04, 20:01, 19:58, 19:55, and 19:52. The cardinal directions N, S, E, and W are also indicated.