# Using Nexus-II with Deep Sky Browser, SkySafari and SiTech motor controller

This note describes how to setup your Nexus-II with your iPhone/iPad/iPod touch for use with Deep Sky Browser, SkySafari and optionally SiTech motor controller.
Nexus-II can be used with Deep Sky Browser if you prefer a conventional DSC interface. It is also necessary to use Deep Sky Browser if your telescope is equipped with SiTech motor controller – in that case Nexus-II provides all the tracking information to SiTech motor controller.

1. Please go to 'Setting' then 'Wi-Fi' on your iPhone/iPad/iPod touch. You will see 'NexusII_XXXXX there (where XXXXX is the serial number of your Nexus-II found on the back of Nexus-II), select it. Nexus will be connected in a few moments.
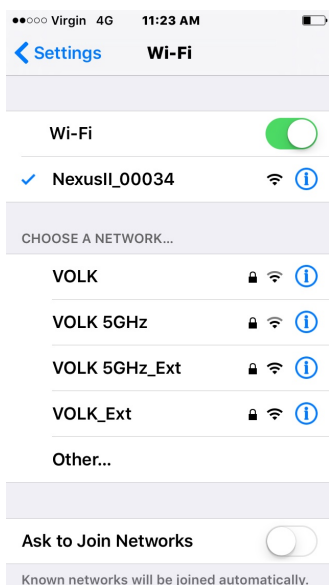
**2. Run Deep Sky Browser and go to 'Settings' by touching ✳.**
Please select the appropriate Telescope Type by touching the button on the right from 'Telescope Type':
- 'Astro Devices Nexus' when using Nexus-II as standalone or with SiTech
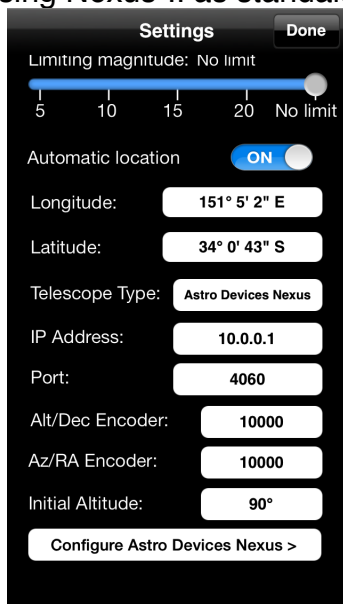
Set the 'IP address' to 10.0.0.1, 'Port' to 4060. Set 'Alt/Dec Encoder' to the number of steps per revolution of the altitude/declination encoder (10000 in this case). Set 'Az/RA Encoder' to the number of steps per revolution of the azimuth/right ascension encoder (10000 in this case). Set 'Initial Altitude' to either 90 degrees or 0 degrees. It is also advisable to set 'Automatic Location' to 'ON'. Touch 'Done'.

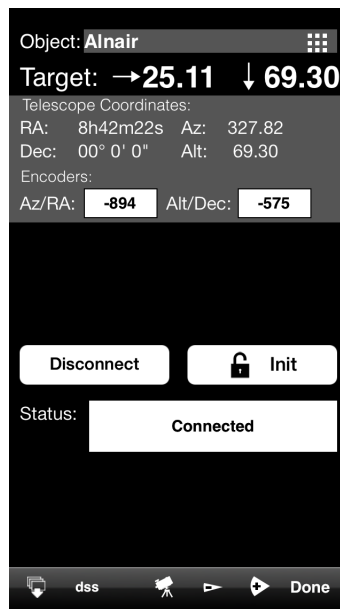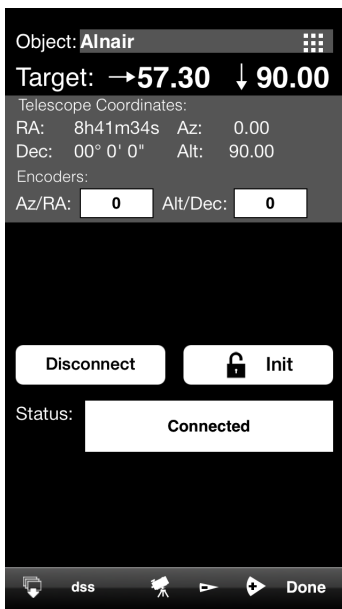**3.** Select 'Alignment Stars' from the catalogues list. The list will show only the stars that are currently above the horizon.
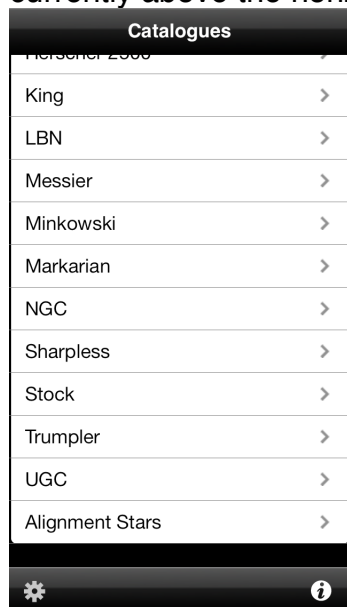
4. Select a star from the list and activate the telescope control panel by touching the telescope icon.
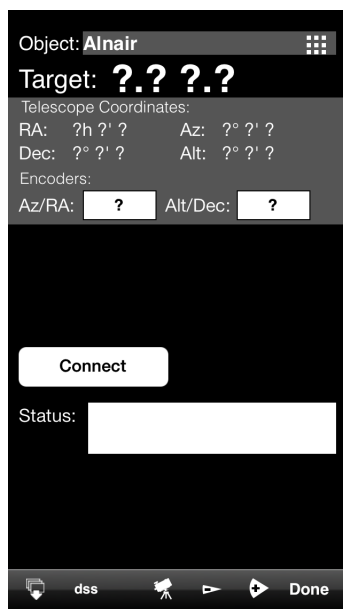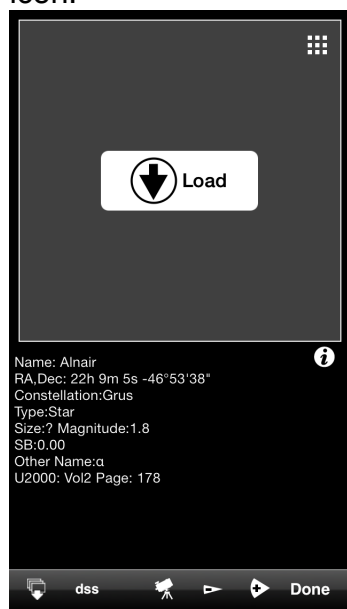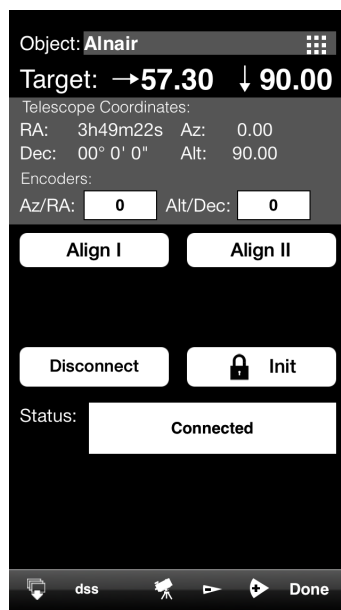

5. Touch 'Connect'. The screen will now show the current encoders' position and coordinates. The coordinates will only be valid once the two star alignment is performed.

Object: **Alnair** ⊞
Target: →**57.30** ↓**90.00**
Telescope Coordinates:
RA: 8h41m34s   Az: 0.00
Dec: 00° 0' 0"   Alt: 90.00
Encoders:
Az/RA: [0]   Alt/Dec: [0]

[Disconnect]   [🔓 Init]

Status: [Connected]

🖥 dss 📷 ▻ ⬙ Done

Object: **Alnair** ⊞
Target: →**25.11** ↓**69.30**
Telescope Coordinates:
RA: 8h42m22s   Az: 327.82
Dec: 00° 0' 0"   Alt: 69.30
Encoders:
Az/RA: [-894]   Alt/Dec: [-575]

[Disconnect]   [🔓 Init]

Status: [Connected]

🖥 dss 📷 ▻ ⬙ Done

Note: *Please make sure that Az coordinate is increasing when rotating the telescope clockwise and Alt coordinate is increasing when the telescope is moved up. Change the sign for the corresponding encoder steps to opposite in the settings if the coordinate is changing incorrectly.*

6. Now point telescope vertically (if 'Initial Altitude' is set to 90 degrees) or horizontally (if 'Initial Altitude' is set to 0 degrees). Please note that the angle is relative to the telescope base and not the ground. The angle does not have to be very precise - +/- 5 degrees is enough.

Now touch the 'Init' button. You will notice that Az,Alt will go to 0, 90. Two buttons will be displayed now – 'Align I' and 'Align II'. The 'Init' button will be locked. 'Long touch' (2 seconds) will unlock the button.


Object: **Alnair** ⊞
Target: →**57.30** ↓**90.00**
Telescope Coordinates:
RA: 3h49m22s   Az: 0.00
Dec: 00° 0' 0"   Alt: 90.00
Encoders:
Az/RA: [0]   Alt/Dec: [0]

[Align I]   [Align II]

[Disconnect]   [🔒 Init]

Status: [Connected]

🖥 dss 📷 ▻ ⬙ Done

7. Now point the telescope at the selected star (Alnair in this case) and touch 'Align I'. A tick mark will appear on the button. Now select a second alignment star (Alshain in this case), point the telescope at the star and touch 'Align II'. A tick mark will appear on the 'Align II' button. The alignment error will be reported in the status window (0.10 here) – the smaller error the better pointing accuracy will be achieved.
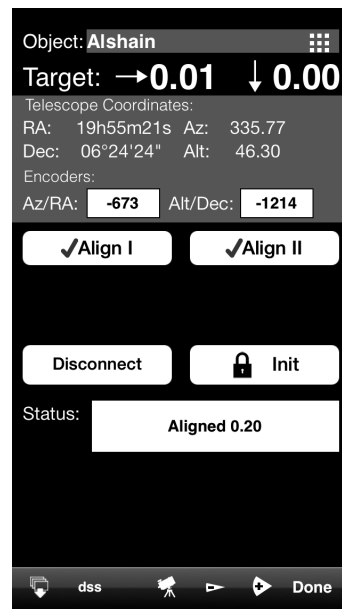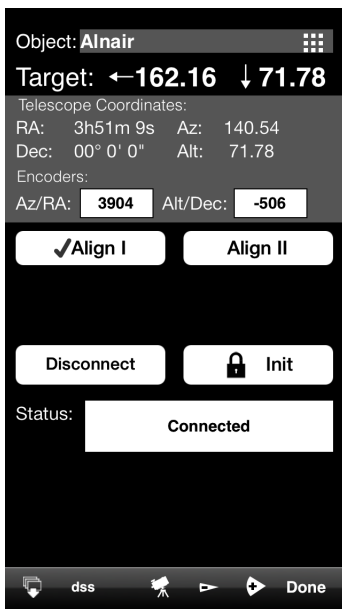
The Alignment is now done.

Now you can touch the telescope icon again to display a small telescope control pane that shows only the direction arrows with deltas and current telescope coordinate. You can now select an object from one of the catalogues and Deep Sky Browser will show where to move the telescope to point at the object (NGC300 in this case). The deltas will approach near zero values once the telescope is close to the object.
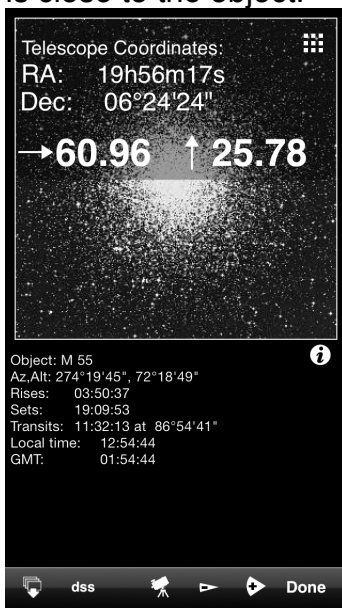
SkySafari Setup for using Nexus-II with SiTech motor controller

Nexus-II emulates LX-200 Classic communication protocol and SkySafari need to be configured for that.

The next step is to set SkySafari's settings. Please start SkySafari on your iPhone and go to **Settings->Telescope->Setup**:
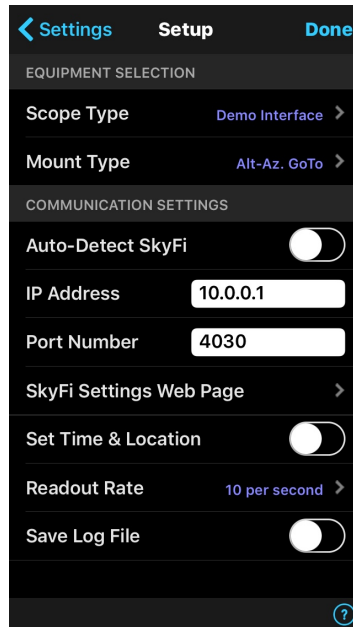
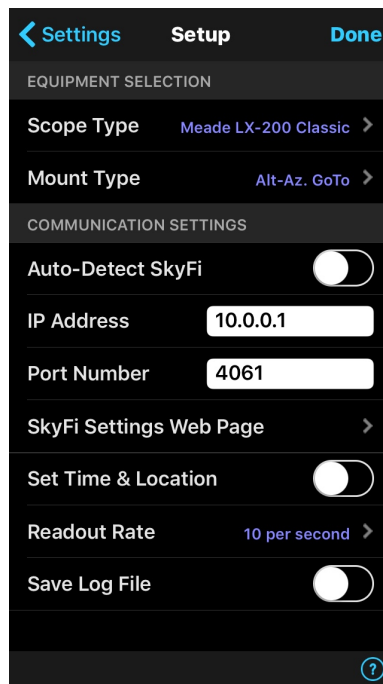Nexus DSC is emulating LX200 protocol when used with a planetarium application. Change the **Scope Type** to **Meade LX200 Classic**:
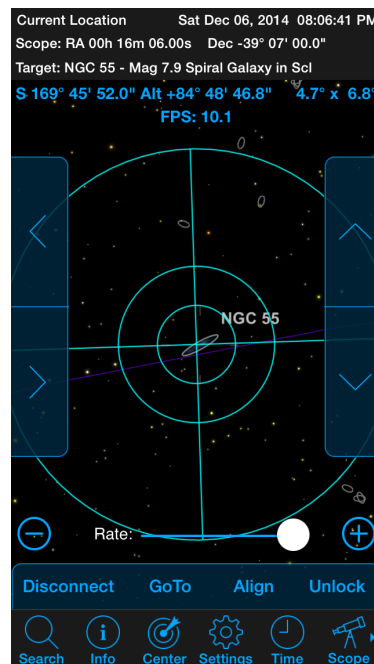

The next step is to set the WiFi network parameters. Assuming default Nexus DSC's settings were not changed:

- set **Mount Type** to Alt-Az GoTo
- **IP Address** should be set to 10.0.0.1
- **Port Number** should be set to 4061
- **Readout Rate** can be set to 10 per second

EQUIPMENT SELECTION

Scope Type   Meade LX-200 Classic ›

Mount Type   Alt-Az. GoTo ›

COMMUNICATION SETTINGS

Auto-Detect SkyFi   ⬤

IP Address   10.0.0.1

Port Number   4061

SkyFi Settings Web Page   ›

Set Time & Location   ⬤

Readout Rate   10 per second ›

Save Log File   ⬤

Now the telescope control panel can be activated by touching the **Scope** icon. Then touch **Connect**.

If the telescope is still aimed at NGC55 then SkySafari will show the telescope cursor on the screen and NGC55 will be in the centre of the screen:

Current Location   Sat Dec 06, 2014 08:06:41 PM
Scope: RA 00h 16m 06.00s   Dec -39° 07' 00.0"
Target: NGC 55 - Mag 7.9 Spiral Galaxy in Scl
S 169° 45' 52.0" Alt +84° 48' 46.8"   4.7° x 6.8°
FPS: 10.1

NGC 55

Rate:

Disconnect   GoTo   Align   Unlock

Search   Info   Center   Settings   Time   Scope

You can now select an object in SkySafari and touch the GoTo button on the telescope control panel and the telescope will slew to the selected object.

Done!