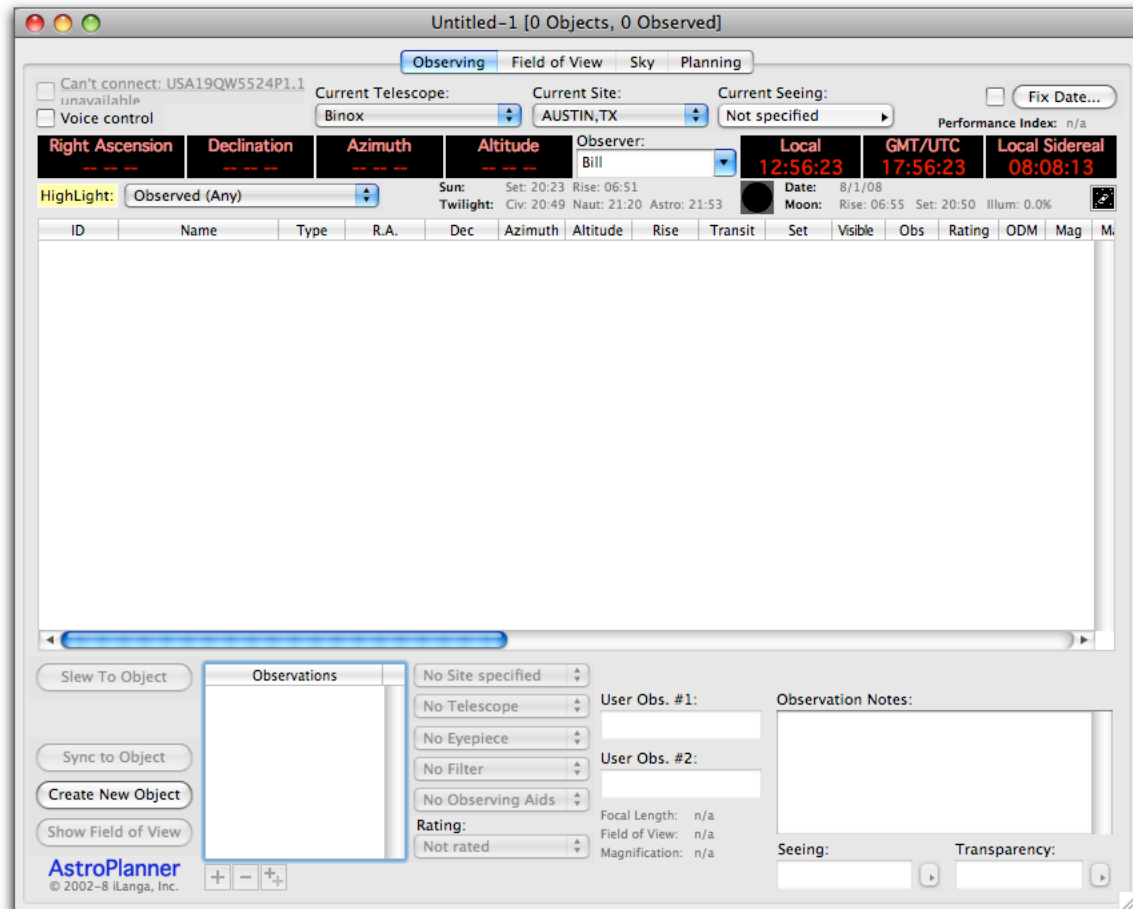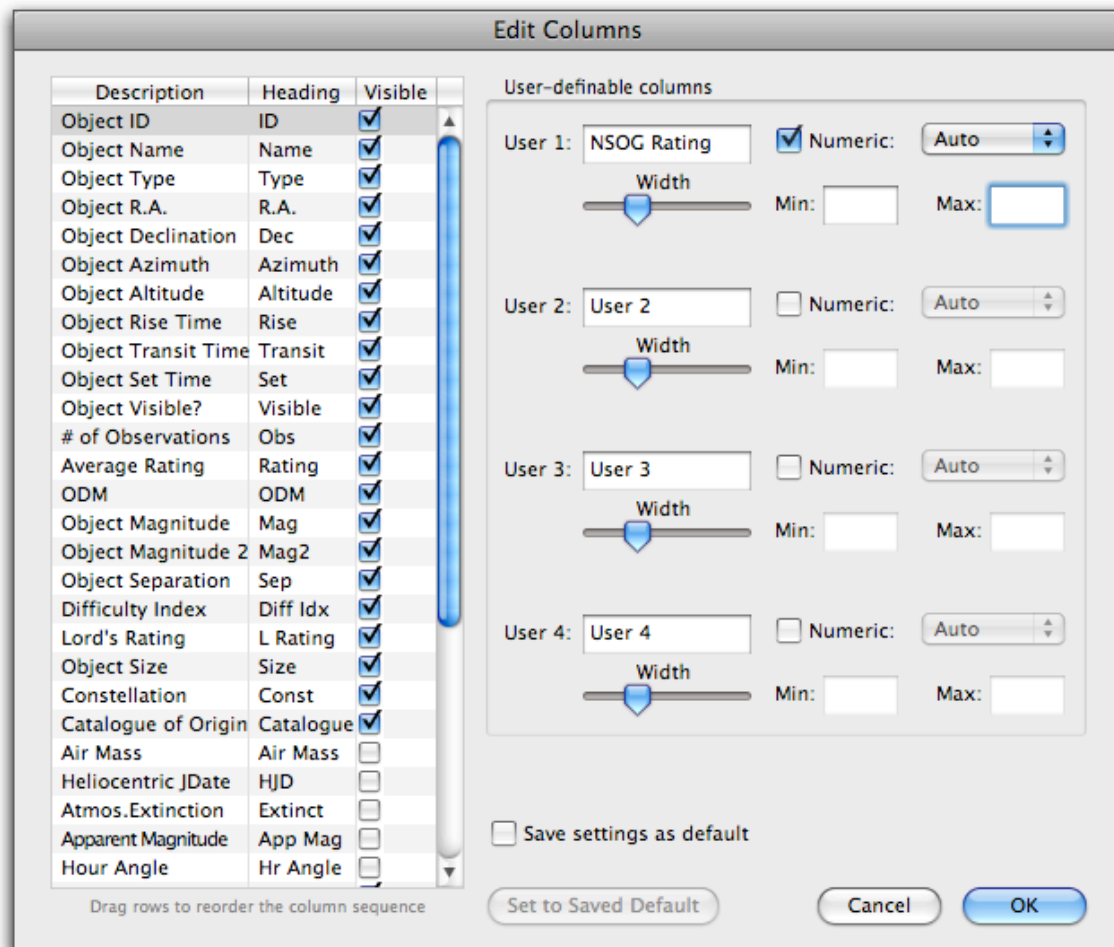# How to create NSOG (Night Sky Observer's Guide) user-contributed plans

For AstroPlanner V1.6

1. Create a new plan (**File –> New**)

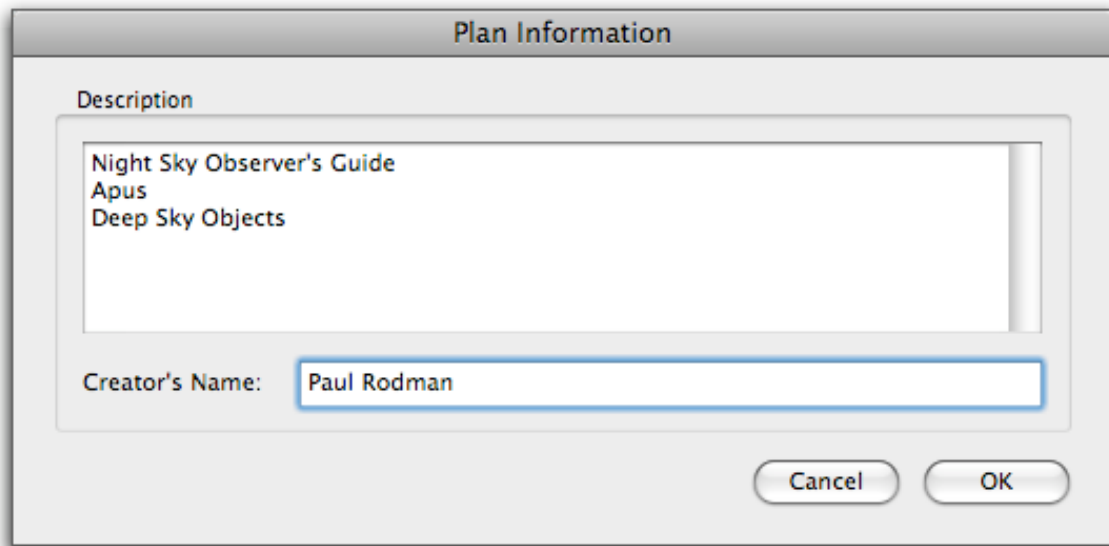2. Use **Edit –> List Columns…** to change user field 1 to have the title "NSOG Rating", and to be numeric.

Edit Columns

Description	Heading	Visible
Object ID	ID	☑
Object Name	Name	☑
Object Type	Type	☑
Object R.A.	R.A.	☑
Object Declination	Dec	☑
Object Azimuth	Azimuth	☑
Object Altitude	Altitude	☑
Object Rise Time	Rise	☑
Object Transit Time	Transit	☑
Object Set Time	Set	☑
Object Visible?	Visible	☑
# of Observations	Obs	☑
Average Rating	Rating	☑
ODM	ODM	☑
Object Magnitude	Mag	☑
Object Magnitude 2	Mag2	☑
Object Separation	Sep	☑
Difficulty Index	Diff Idx	☑
Lord's Rating	L Rating	☑
Object Size	Size	☑
Constellation	Const	☑
Catalogue of Origin	Catalogue	☑
Air Mass	Air Mass	☐
Heliocentric JDate	HJD	☐
Atmos.Extinction	Extinct	☐
Apparent Magnitude	App Mag	☐
Hour Angle	Hr Angle	☐

Drag rows to reorder the column sequence

User-definable columns

User 1: NSOG Rating   ☑ Numeric: Auto
Width   Min: ___   Max: ___

User 2: User 2   ☐ Numeric: Auto
Width   Min: ___   Max: ___

User 3: User 3   ☐ Numeric: Auto
Width   Min: ___   Max: ___

User 4: User 4   ☐ Numeric: Auto
Width   Min: ___   Max: ___

☐ Save settings as default

[Set to Saved Default]   [Cancel]   [OK]

3. Use **File –> Get Info…** and change the title and creator to be one of the following (depending on whether you're doing Stars or Deep Sky objects):
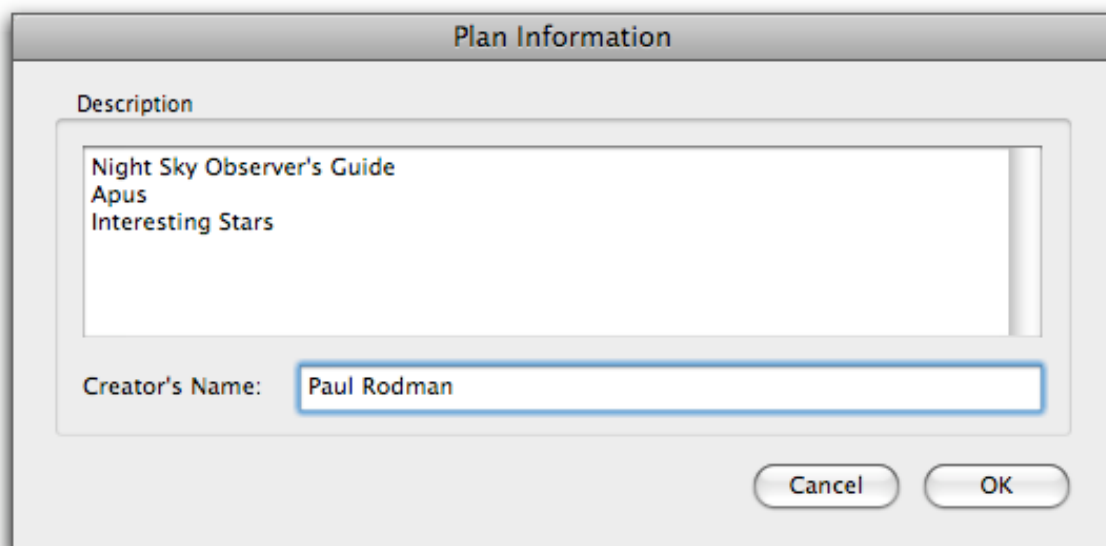
Plan Information

Description

Night Sky Observer's Guide
Apus
Interesting Stars

Creator's Name: Paul Rodman

[Cancel]   [OK]

Plan Information

Description

Night Sky Observer's Guide
Apus
Deep Sky Objects

Creator's Name: Paul Rodman

Cancel   OK

4. Change to the Planning tab. First we'll do the stars. For the constellation you're working on (in this document we're working on Apus, the first constellation in V3). Find the "Selected Variable Stars" table after the constellation map. Click the **Lookup ID…** button. Enter the variable star IDs (in the "Name" column in the table), and click **Lookup**. Note that the search is case-insensitive.

Lookup Items

Paste or type item/s, separated by new lines, tabs, and/or commas

```
T aps
the aps
r aps
vz aps
ww aps
dw aps
```
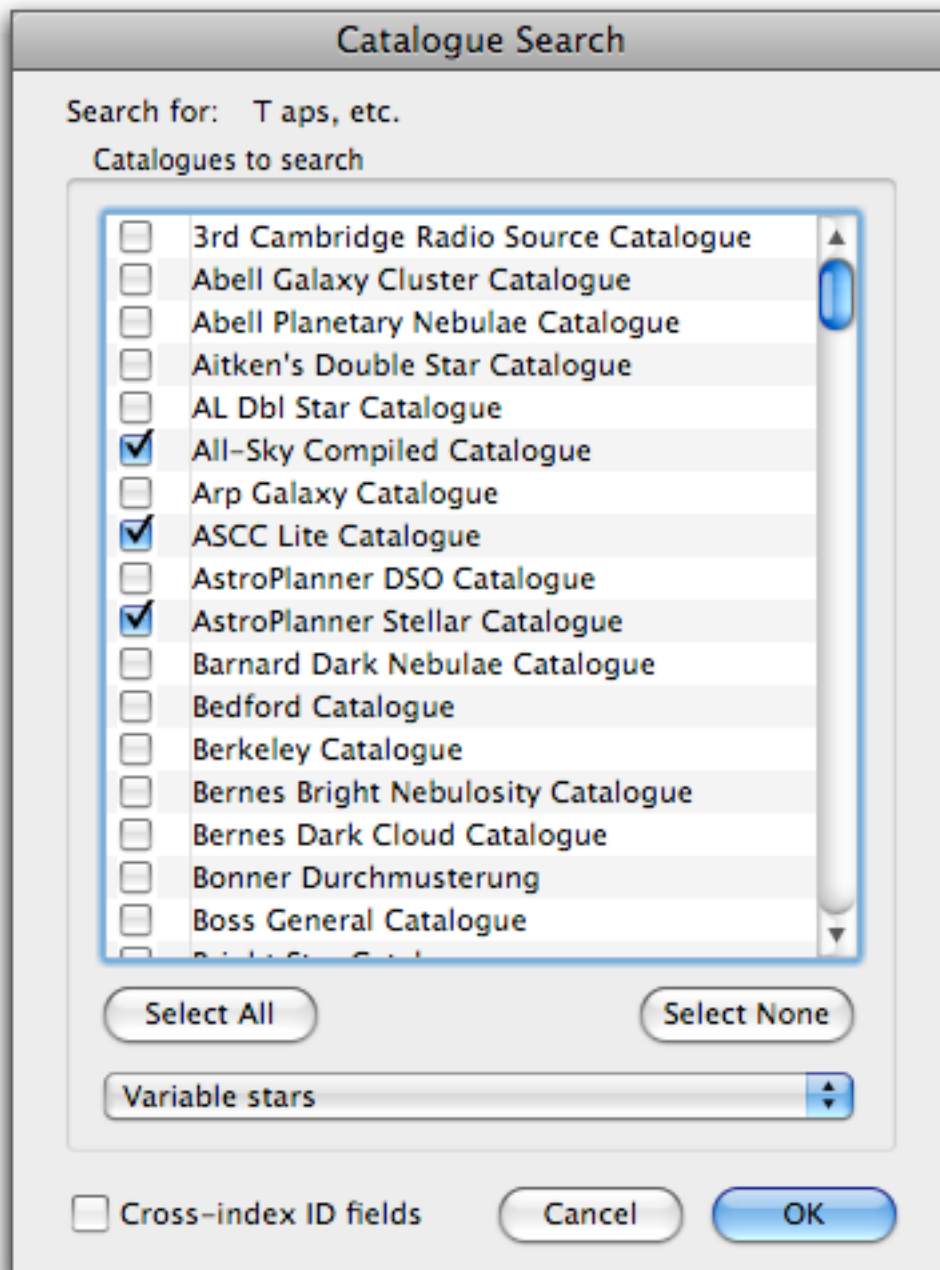
Prefix:

[   ]

☐ Only on numeric items

Suffix:

[   ]

☐ Only on numeric items

Prefix and suffix are added to beginning and end of each item above

(Double Star IDs)   (Cancel) (Lookup)

5. Since we're looking at variable stars, select the search to include variable stars only, and click **OK**.

6. The results will probably have some duplicates. Select one line for each ID found, preferably from the GCVS, since that's the "definitive" catalogue for variable stars, and click the **Add Selected** button to add the objects to the plan.

Search Results

Search	ID	Obs	Name	Type	RA	Dec	Mag	Mag2	Sep	Size	Const	Catalogue	
T aps	GCVS30003		T Aps,GCVS30003	Star+Var Star	13h 55.8m	−77°48'	8.40	15.00			Aps	AP Stellar	
T aps	GCVS30003		T Aps	Var Star	13h 55.9m	−77°48'	8.40	15.00			Aps	GCVS	VarType: M, Mag:8.4–15.0, Epoch:244109
the aps	SAO257112		θ Aps,SAO257112	Star	14h 05.3m	−76°48'	5.50				Aps	AP Stellar	
the aps	HIP68815		θ Aps,the Aps,HR5261,HIP68815	Var Star	14h 05.3m	−76°48'	5.69				Aps	LX200GPS	Par:9.93, PMra:−87.41, PMdec:−31.23, B–V
the aps	Sky14050062		J140519.87−764748.	Star+Var Star	14h 05.3m	−76°48'	5.69				Aps	Sky 2000	PM/RA=−0.02551,PM/Dec=−00.0312,Vra
r aps	SAO257212		R Aps,SAO257212,GCVS30001	Star	14h 57.9m	−76°40'	5.35				Aps	AP Stellar	
r aps	GCVS30001		R Aps	Var Star	14h 57.9m	−76°40'	5.35				Aps	GCVS	VarType: CST:, Mag:5.35–
r aps	HIP73223		R Aps,HR5540,HIP73223	Var Star	14h 57.9m	−76°40'	5.37				Aps	LX200GPS	Par:7.62, PMra:−68.58, PMdec:−16.14, B–V
r aps	Sky14570145		J145752.98−763945.	Star+Var Star	14h 57.9m	−76°40'	5.37				Aps	Sky 2000	PM/RA=−0.01982,PM/Dec=−00.0161,Vra
vz aps	GCVS30044		VZ Aps	Var Star	16h 16.2m	−74°02'	8.20	17.50			Aps	GCVS	VarType: M, Mag:8.2–17.5, Epoch:243684
ww aps	GCVS30045		WW Aps	Var Star	16h 31.5m	−75°00'	9.00	16.80			Aps	GCVS	VarType: M, Mag:9.0–16.8, Epoch:242794
dw aps	GCVS30145		DW Aps,GCVS30145	Star+Var Star	17h 23.5m	−67°56'	7.90	9.10			Aps	AP Stellar	
dw aps	GCVS30145		DW Aps	Var Star	17h 23.5m	−67°56'	7.90	9.10			Aps	GCVS	VarType: EA/SD:, Mag:7.9–9.1, Epoch:243

Slew to Object | Select Non–duplicates | Add Selected | Add All

Search complete

☑ Keep window open   ☐ Don't add if observed

6 selected from 13 objects found

Note that you might not find certain objects in your search. We'll discuss how to locate these objects later in this discussion. Check that all the objects in the table are now in the plan. Drag the rows to re-order where necessary.

Note also that Theta Aps cannot be identified as such. In this case, edit the Name field to make things clearer.

7. Now do the same for the "Selected Double Star" table. It might be convenient to do it in stages, since there are a lot of stars in the double star table (typically). You might need to convert the "Name" in the book to the equivalent DS ID to look up in AstroPlanner. E.g. the first item in the table is β 1743. To figure this out, we'll enter it manually. Click the "+" button under the list of objects:

A new line is added, the ID field is selected and the "special character" palette is displayed. The right-hand block contains common double star ID prefixes. The one we want is the top right (β). Click it and the ASCII prefix (BU) is added to the ID field. Enter the number (1743), and click **Lookup ID…**
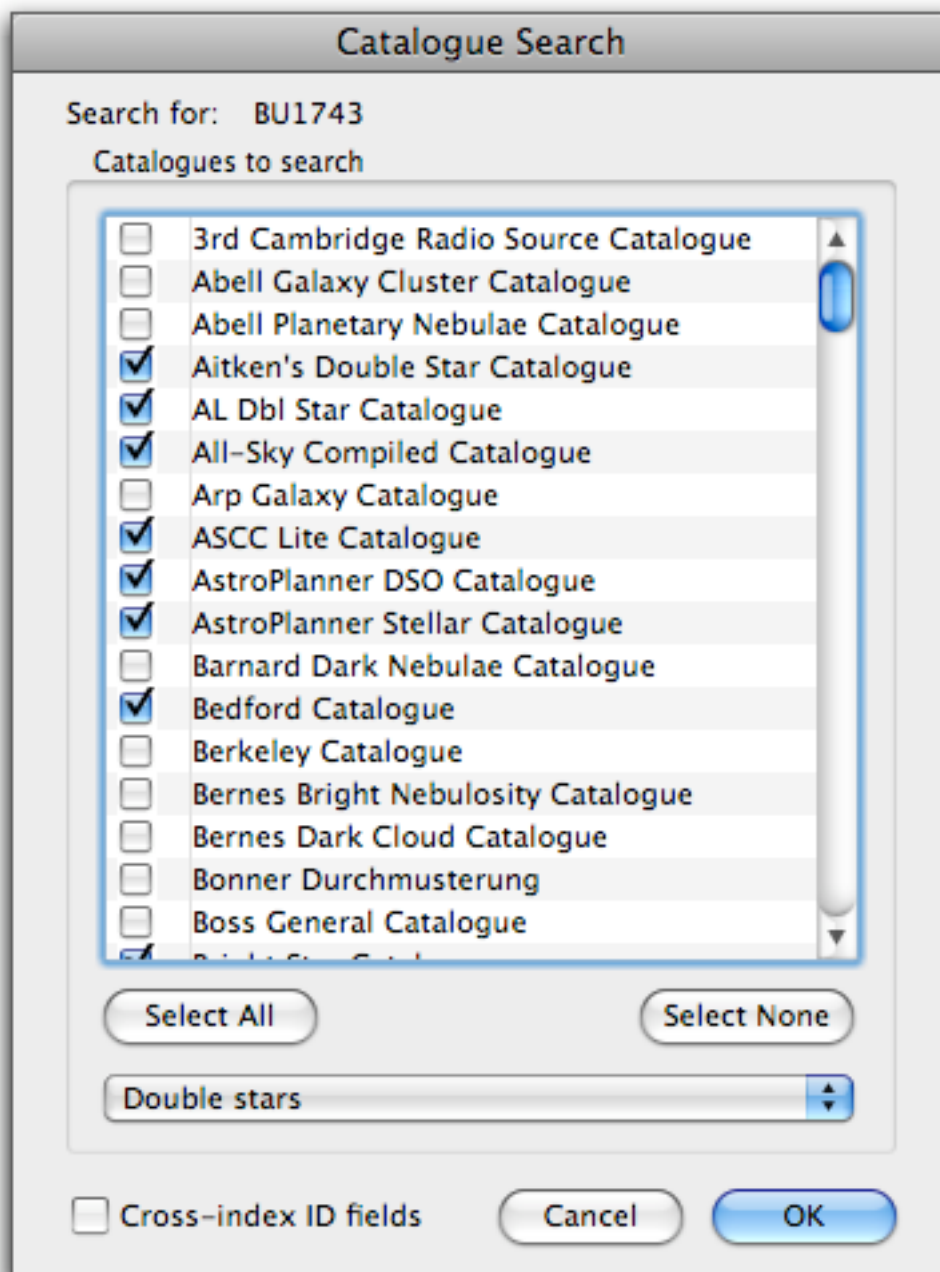
Select "Double Stars" to search only catalogues containing those. Click **OK**.

The search indicates that no object was found. Drat! To find this object in the catalogues will require another approach. From the book table enter the RA and Dec coordinates manually:

Now use **Object –> Find Synonyms**. All close-by objects to the RA/Dec position are found. Included in the results is an object from WDS 2006 (a definitive double-star catalogue). This has the ID of B1743. This is undoubtedly the object we're looking for. I consider this a bug in the book!

Select the entry and click **Add Selected** to add the object to the plan.

Note: A sanity check for all objects is to check the Catalogue column in the plan and make sure all objects are in the constellation you're working on.

Continue adding objects until all objects have been added.

ID	Name	Type	R.A.	Dec	Rise	Transit	Set	Obs	Mag	Mag2	Separation	Size	Const	C.
GCVS30003	T Aps	Var Star	13h 55m 51.20s	−77° 48' 08.0"	Never	18h 47m	Always		8.40	15.00			Aps	
Sky14050062	Theta Aps	Star+Var Star	14h 05m 19.88s	−76° 47' 48.3"	Never	18h 56m	Always		5.70				Aps	
GCVS30001	R Aps	Var Star	14h 57m 53.00s	−76° 39' 46.0"	Never	19h 49m	Always		5.35				Aps	
GCVS30044	VZ Aps	Var Star	16h 16m 14.50s	−74° 02' 25.0"	Never	21h 07m	Always		8.20	17.50			Aps	
GCVS30045	WW Aps	Var Star	16h 31m 31.20s	−74° 59' 44.0"	Never	21h 23m	Always		9.00	16.80			Aps	
GCVS30145	DW Aps	Var Star	17h 23m 30.00s	−67° 55' 45.0"	Never	22h 15m	Always		7.90	9.10			Aps	
WDS13531−7316	B1743	Dbl	13h 53m 06.20s	−73° 16' 07.0"	Never	18h 44m	Always		7.00	11.60	3.1		Aps	
WDS13535−8016	HJ4610	Dbl	13h 53m 30.80s	−80° 16' 22.0"	Never	18h 45m	Always		7.80	13.20	11.8		Aps	
WDS14145−7546	HJ4652	Dbl	14h 14m 29.20s	−75° 45' 44.0"	Never	19h 06m	Always		8.00	12.10	24.1		Aps	
WDS14226−7333	HJ4667	Dbl	14h 22m 38.73s	−73° 33' 21.5"	Never	19h 14m	Always		8.24	8.64	2.3		Aps	
WDS14295−8006	HJ4671	Dbl	14h 29m 26.05s	−80° 06' 12.0"	Never	19h 21m	Always		8.08	8.74	4.2		Aps	
WDS14318−7616	I326	Dbl	14h 31m 50.10s	−76° 16' 26.0"	Never	19h 23m	Always		7.14	9.96	2.3		Aps	
WDS14318−7616	I326	Dbl	14h 31m 50.10s	−76° 16' 26.0"	Never	19h 23m	Always		7.00	13.50	14.4		Aps	
WDS14515−7456	HJ4695	Dbl	14h 51m 30.10s	−74° 55' 59.0"	Never	19h 43m	Always		6.80	12.00	17.7		Aps	
WDS14532−7311	I236	Dbl	14h 53m 13.57s	−73° 11' 24.3"	Never	19h 44m	Always		5.87	7.59	2.2		Aps	
WDS15064−7210	CPO15	Dbl	15h 06m 22.78s	−72° 10' 12.6"	Never	19h 57m	Always		7.19	8.45	1.4		Aps	
WDS15186−7828	RST2943	Dbl	15h 18m 35.20s	−78° 28' 19.9"	Never	20h 10m	Always		7.29	8.79	0.5		Aps	
WDS15204−7534	HJ4742	Dbl	15h 20m 21.20s	−75° 33' 51.0"	Never	20h 11m	Always		6.90	12.70	30.3		Aps	
HR5730	κ Aps,SAO257289,HD1...	Dbl	15h 31m 30.80s	−73° 23' 22.0"	Never	20h 23m	Always		5.49	12.39	27.0		Aps	
WDS15391−7218	I969	Dbl	15h 39m 06.67s	−72° 17' 51.6"	Never	20h 30m	Always		7.46	10.64	2.1		Aps	
HR5782	κ Aps,SAO257307,HD1...	Triple	15h 40m 21.20s	−73° 26' 48.0"	Never	20h 31m	Always		5.65	12.35	15.0		Aps	
WDS15595−7107	BSO21	Dbl	15h 59m 32.40s	−71° 06' 45.0"	Never	20h 51m	Always		7.92	8.65	37.1		Aps	
HR6020	δ Aps,SAO257380,HD1...	Triple	16h 20m 20.80s	−78° 41' 45.0"	Never	21h 11m	Always		4.68	5.08	102.9		Aps	
WDS16408−7218	HDO255	Dbl	16h 40m 47.44s	−72° 17' 58.6"	Never	21h 32m	Always		6.67	10.60	2.4		Aps	
HR6163	β Aps,SAO257424,HD1...	Dbl	16h 43m 04.60s	−77° 31' 03.0"	Never	21h 34m	Always		4.24	12.04	51.1		Aps	
WDS16599−7325	I100	Dbl	16h 59m 54.72s	−73° 25' 21.1"	Never	21h 51m	Always		6.92	8.43	0.9		Aps	
WDS17099−8219	HJ4884	Dbl	17h 09m 51.65s	−82° 19' 07.1"	Never	22h 01m	Always		7.15	8.88	34.8		Aps	
WDS17103−7523	HJ4904	Dbl	17h 10m 16.34s	−75° 22' 35.6"	Never	22h 01m	Always		7.56	9.13	6.8		Aps	
WDS17202−7003	I104	Dbl	17h 20m 12.68s	−70° 02' 43.3"	Never	22h 11m	Always		6.67	9.72	0.9		Aps	
WDS17443−7213	HDO275	Dbl	17h 44m 19.81s	−72° 13' 15.4"	Never	22h 35m	Always		6.85	8.11	0.4		Aps	
WDS17464−7020	I610	Dbl	17h 46m 26.10s	−70° 20' 06.0"	Never	22h 38m	Always		8.00	11.00	2.4		Aps	
WDS18106−7511	HJ4999	Dbl	18h 10m 33.96s	−75° 11' 17.1"	Never	23h 02m	Always		7.68	8.61	13.2		Aps	
WDS18126−7340	HDO284	Dbl	18h 12m 34.03s	−73° 40' 20.7"	Never	23h 04m	Always		5.96	9.14	2.3		Aps	
WDS18154−7640	GLI241	Dbl	18h 15m 25.67s	−76° 40' 00.4"	Never	23h 07m	Always		8.86	9.12	2.0		Aps	
WDS18204−8014	RST3156	Dbl	18h 20m 22.14s	−80° 14' 21.5"	Never	23h 11m	Always		7.51	11.15	2.9		Aps	

ID: WDS18204−8014
Right Ascension: 18 h 20 m 22.14 s
Type: Dbl
Magnitude: 7.5
Notes: AB. First: 1934|30deg|2.6". Last: 1991|24deg|2.9". #Obs: 4. PM: RA: 0"/Kyr|Dec:−20"/Kyr. PM (sec): RA:1"/Kyr|Dec:−20"/Kyr.
NSOG Rating:

Lookup ID...   ☑ All
Spectral: KOIII
Magnitude: 11.2
User 2:

Name: RST3156
Declination: −80 ° 14 ' 21.49 "
Size:
Separation: 2.9
User 3:

Lookup Name...   ☑ All
Position angle: 24
Period:
User 4:

8. The text in the book has some of the stars listed as "Interesting Stars". Each entry has a "star rating". Select those stars and put the number of stars in the rating into the NSOG Rating user field for the associated plan object. E.g.for Theta Aps, the rating is "****":

Untitled-1 [35 Objects, 0 Observed]

Observing | Field of View | Sky | **Planning**

ID	Name	Type	R.A.	Dec	Rise	Transit	Set	Obs	Mag	Mag2	Separation	Size	Const	C.
GCVS30003	T Aps	Var Star	13h 55m 51.20s	−77° 48' 08.0"	Never	18h 47m	Always		8.40	15.00			Aps	
Sky14050062	Theta Aps	Star+Var Star	14h 05m 19.88s	−76° 47' 48.3"	Never	18h 56m	Always		5.70				Aps	
GCVS30001	R Aps	Var Star	14h 57m 53.00s	−76° 39' 46.0"	Never	19h 49m	Always		5.35				Aps	
GCVS30044	VZ Aps	Var Star	16h 16m 14.50s	−74° 02' 25.0"	Never	21h 07m	Always		8.20	17.50			Aps	
GCVS30045	WW Aps	Var Star	16h 31m 31.20s	−74° 59' 44.0"	Never	21h 23m	Always		9.00	16.80			Aps	
GCVS30145	DW Aps	Var Star	17h 23m 30.00s	−67° 55' 45.0"	Never	22h 15m	Always		7.90	9.10			Aps	
WDS13531−7316	B1743	Dbl	13h 53m 06.20s	−73° 16' 07.0"	Never	18h 44m	Always		7.00	11.60	3.1		Aps	
WDS13535−8016	HJ4610	Dbl	13h 53m 30.80s	−80° 16' 22.0"	Never	18h 45m	Always		7.80	13.20	11.8		Aps	
WDS14145−7546	HJ4652	Dbl	14h 14m 29.20s	−75° 45' 44.0"	Never	19h 06m	Always		8.00	12.10	24.1		Aps	
WDS14226−7333	HJ4667	Dbl	14h 22m 38.73s	−73° 33' 21.5"	Never	19h 14m	Always		8.24	8.64	2.3		Aps	
WDS14295−8006	HJ4671	Dbl	14h 29m 26.05s	−80° 06' 12.0"	Never	19h 21m	Always		8.08	8.74	4.2		Aps	
WDS14318−7616	I326	Dbl	14h 31m 50.10s	−76° 16' 26.0"	Never	19h 23m	Always		7.14	9.96	2.3		Aps	
WDS14318−7616	I326	Dbl	14h 31m 50.10s	−76° 16' 26.0"	Never	19h 23m	Always		7.00	13.50	14.4		Aps	
WDS14515−7456	HJ4695	Dbl	14h 51m 30.10s	−74° 55' 59.0"	Never	19h 43m	Always		6.80	12.00	17.7		Aps	
WDS14532−7311	I236	Dbl	14h 53m 13.57s	−73° 11' 24.3"	Never	19h 44m	Always		5.87	7.59	2.2		Aps	
WDS15064−7210	CPO15	Dbl	15h 06m 22.78s	−72° 10' 12.6"	Never	19h 57m	Always		7.19	8.45	1.4		Aps	
WDS15186−7828	RST2943	Dbl	15h 18m 35.20s	−78° 28' 19.9"	Never	20h 10m	Always		7.29	8.79	0.5		Aps	
WDS15204−7534	HJ4742	Dbl	15h 20m 21.20s	−75° 33' 51.0"	Never	20h 11m	Always		6.90	12.70	30.3		Aps	
HR5730	κ Aps,SAO257289,HD1…	Dbl	15h 31m 30.80s	−73° 23' 22.0"	Never	20h 23m	Always		5.49	12.39	27.0		Aps	
WDS15391−7218	I969	Dbl	15h 39m 06.67s	−72° 17' 51.6"	Never	20h 30m	Always		7.46	10.64	2.1		Aps	
HR5782	κ Aps,SAO257307,HD1…	Triple	15h 40m 21.20s	−73° 26' 48.0"	Never	20h 31m	Always		5.65	12.35	15.0		Aps	
WDS15595−7107	BSO21	Dbl	15h 59m 32.40s	−71° 06' 45.0"	Never	20h 51m	Always		7.92	8.65	37.1		Aps	
HR6020	δ Aps,SAO257380,HD1…	Triple	16h 20m 20.80s	−78° 41' 45.0"	Never	21h 11m	Always		4.68	5.08	102.9		Aps	
WDS16408−7218	HDO255	Dbl	16h 40m 47.44s	−72° 17' 58.6"	Never	21h 32m	Always		6.67	10.60	2.4		Aps	
HR6163	β Aps,SAO257424,HD1…	Dbl	16h 43m 04.60s	−77° 31' 03.0"	Never	21h 34m	Always		4.24	12.04	51.1		Aps	
WDS16599−7325	I100	Dbl	16h 59m 54.72s	−73° 25' 21.1"	Never	21h 51m	Always		6.92	8.43	0.9		Aps	
WDS17099−8219	HJ4884	Dbl	17h 09m 51.65s	−82° 19' 07.1"	Never	22h 01m	Always		7.15	8.88	34.8		Aps	
WDS17103−7523	HJ4904	Dbl	17h 10m 16.34s	−75° 22' 35.6"	Never	22h 01m	Always		7.56	9.13	6.8		Aps	
WDS17202−7003	I104	Dbl	17h 20m 12.68s	−70° 02' 43.3"	Never	22h 11m	Always		6.67	9.72	0.9		Aps	
WDS17443−7213	HDO275	Dbl	17h 44m 19.81s	−72° 13' 15.4"	Never	22h 35m	Always		6.85	8.11	0.4		Aps	
WDS17464−7020	I610	Dbl	17h 46m 26.10s	−70° 20' 06.0"	Never	22h 38m	Always		8.00	11.00	2.4		Aps	
WDS18106−7511	HJ4999	Dbl	18h 10m 33.96s	−75° 11' 17.1"	Never	23h 02m	Always		7.68	8.61	13.2		Aps	
WDS18126−7340	HDO284	Dbl	18h 12m 34.03s	−73° 40' 20.7"	Never	23h 04m	Always		5.96	9.14	2.3		Aps	
WDS18154−7640	GLI241	Dbl	18h 15m 25.67s	−76° 40' 00.4"	Never	23h 07m	Always		8.86	9.12	2.0		Aps	
WDS18204−8014	RST3156	Dbl	18h 20m 22.14s	−80° 14' 21.5"	Never	23h 11m	Always		7.51	11.15	2.9		Aps	

Show Field of View | Show Catalogue ▶ | Search Catalogue/s ▶ | Add Special ▶ | Delete ▶

ID: Sky14050062
Lookup ID… ☑ All

Right Ascension: 14 h 05 m 19.87 s

Type: Star+Var Sta ▶

Magnitude: 5.7

Notes: PM/RA=−0.02551,PM/Dec=−00.0312,Vrad=+009,Prlx=+00.00993,B=6.91,B−V=+1.22,Mpv=6.1,Period=119,Vtype=194

NSOG Rating: 4

Spectral: M6.5III
Magnitude:

User 2:

Name: Theta Aps
Lookup Name… ☑ All

Declination: −76 ° 47 ' 48.31 "

Size:
Separation: 0.0

User 3:

Position angle: 0
Period:

User 4:

9. Finally, save the plan document with the name NSOG_xxx_S.apd, where xxx is the uppercase three-character abbreviation for the constellation. In this case, APS (Apus).

10. Upload the plan to the user-contributed database, using **File –> User-Contributed Plans –> Upload…**

Upload Plan

Description

> Night Sky Observer's Guide
> Apus
> Interesting Stars

Creator's Name: Paul Rodman

File Name: NSOG_APS_S.txt

Must be a valid file name, 6 to 31 non-blank characters in length, end in ".txt", and avoid special characters.

File will be listed in the "Night Sky Observer's Guide (Kepple and Sanner)" category, on the "NSOG" tab.

Night Sky Observer's Guide (Kepple and Sanner) files start with "NSOG_".
Astronomical League files start with "AL_".
Sky and Telescope Magazine files start with "ST_".
Astronomy Magazine files start with "AS_".

☐ Announce plan availability to AstroPlanner Yahoo Group   (Cancel)   (Upload)

The fields should all be correct if you followed the previous instructions.

11. Repeat the above for a new plan for Deep Sky objects. Differences are:
a. There is no table. Work from the list of objects in the "Deep-Sky Objects" section of the chapter in the book.
b. All objects have an NSOG Rating.
c. The file name will be NSOG_xxx_D.apd