Article Title: **Personal Observing Goal Verification**

By Mike Hotka

At the end of last month's article, I left you driving home from your observing location after a successful night of observing. Now I'll discuss what I do after I get home. I have a few more tasks to do before I consider this observing session complete.

The first thing I do is to log all my outing's observed objects into my Standard Edition of SkyTools 4 (ST4) (SkyTools 4 Standard Edition (skyhound.com)) database. First, I open the observing list I was working on during the outing in the main ST4 display:
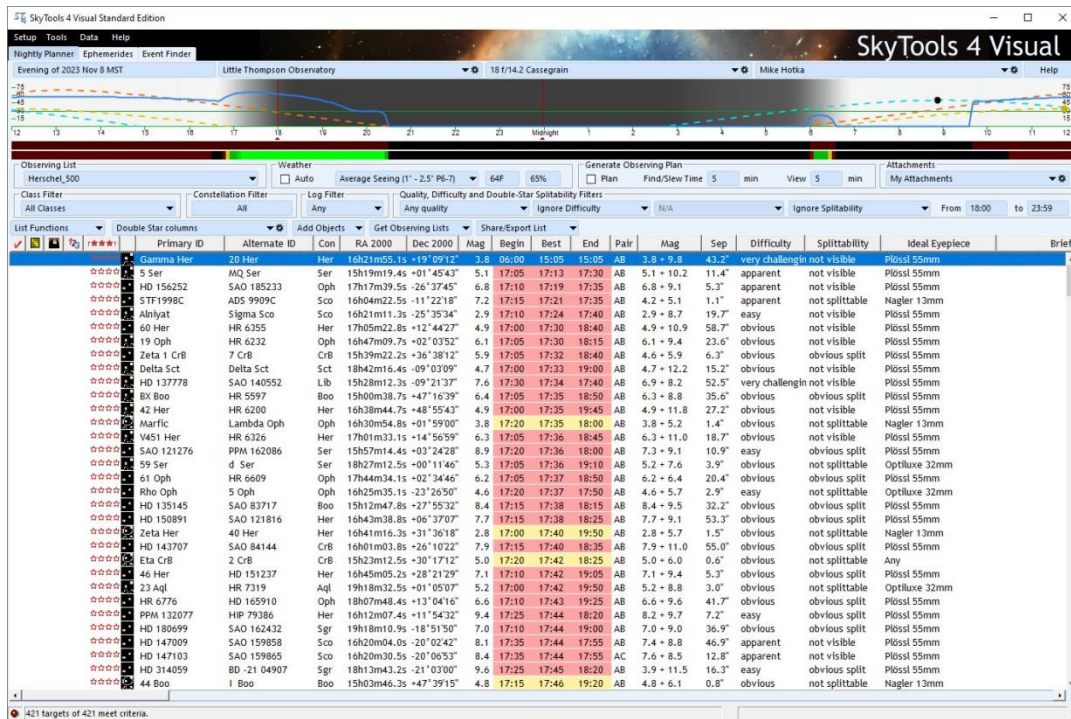
I highlight an object I observed during the outing (the blue highlighted area). In this example, the double star Gamma Her is selected. I can either, hover the cursor over this blue, highlighted area, and click the right mouse button to select the *Create Log Entry* choice in the pull-down menu, or I can just press the hotkey *m* to add a new log entry. In either case, the following input dialogue window will be displayed:
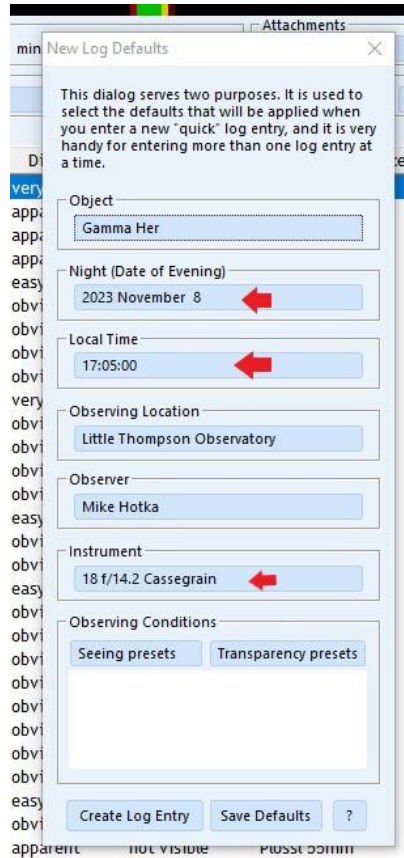
I then verify/adjust the fields of the Date, Local Time and Instrument (arrowed) to match the Gamma Her observation's data and click the *Create Log Entry* button at the bottom of this window. The following window will pop-up, allowing me to verify a log entry was properly created for this object:
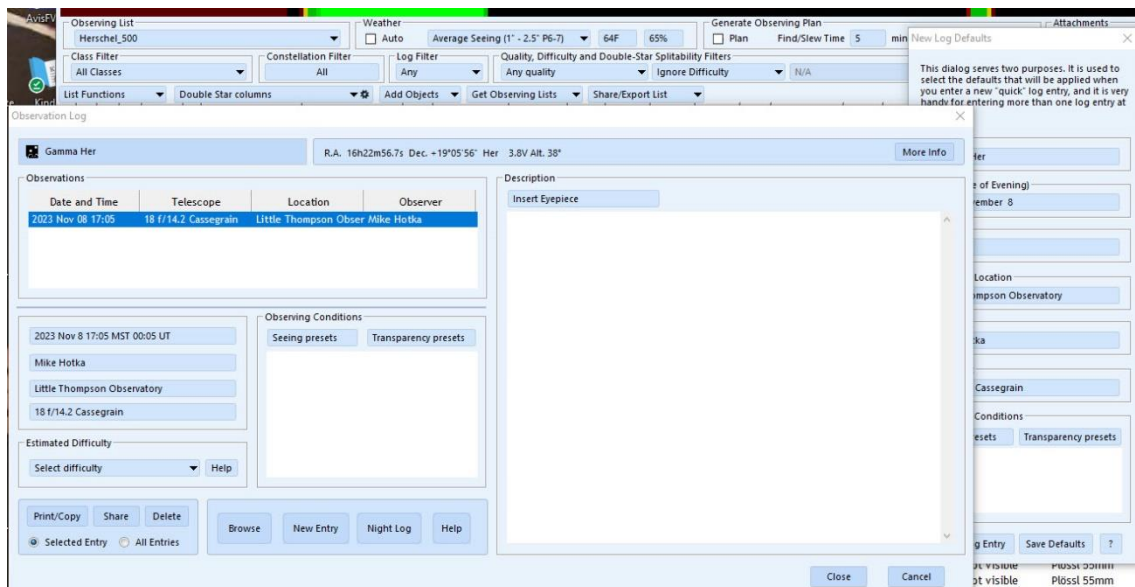
Close the *Observation Log* window and the *New Log Defaults* window and this object is now in the ST4's database as observed. I repeat these steps until all the objects I recorded in my field logbook are logged.

Then I open a blank Microsoft Word document and transpose all the text notes from my field logbook into this MS Word document. An example page from my logbook is displayed below:
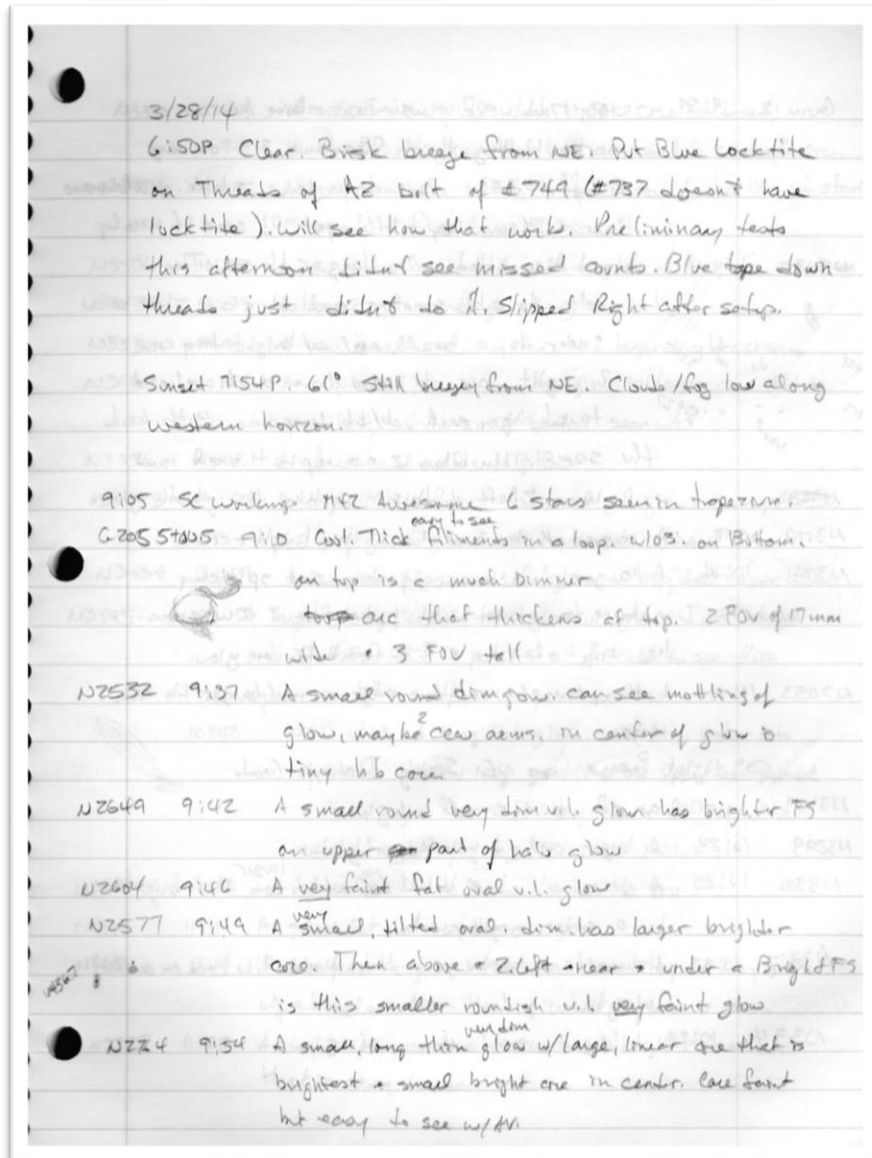
Once I am done entering all the text from every logbook page of this outing into the MS Word document, I print a hard copy of these observing notes. I then can add any sketches I did in the field logbook to the corresponding printed pages. The below example is the finished, printed page of the above logbook example:

Friday, March 28, 2014

Cady Alverado brought Blue Locktite to *lock* the AZ bold to the ground board of scope #749 (#737 doesn't have Locktite for the threads grabbed by themselves and there is no AZ slippage). Preliminary tests showed this solved the slippage issue (didn't see missed counts) and I used the Sky Commander the rest of the night. The blue masking tape down the threads from the night before just didn't do it. It slipped right after the setup steps.

6:50 PM. Clear, Brisk breeze from NE. Sunset at 7:54 PM. 61 degrees. Smoke low along western horizon.

9:05 PM. Sky Commander works. M42 awesome. 6 stars seen in trapezium. Slewed between M41 and M42 twice and object in FOV both times.

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G205.5+00.5	9:10 PM	17mm – Cool. This. Easy to see with O3. Thick filaments in a loop on bottom and arc that thickens at top. 2 FOV wide and 3 FOV tall.
NGC 2532	9:37 PM	17mm – A small, round, dim glow. Can see mottling of glow, maybe 2 CCW arms. In center of glow is a tiny, hare brighter core.
NGC 2649	9:42 PM	17mm – A small, round, very dim, uniformly lit glow. Has brighter field star on upper part of halo glow.
NGC 2604	9:46 PM	17mm – A <u>very</u> faint, fat oval, uniformly lit glow.
NGC 2577 UGC 4367	9:49 PM	17mm – A very small, tilted oval. Dim. Has larger, brighter core. Then above and to right and near and under a bright field star is this smaller, roundish, uniformly lit, very faint glow of U4367.
NGC 2764	9:54 PM	17mm – A small, long thin, very dim glow with larger, linear core that is brighter with small, bright core in center. Core faint but easy to see w/AV.

I punch 3 holes in these pages and put the pages in a 3-ring notebook for future reference:
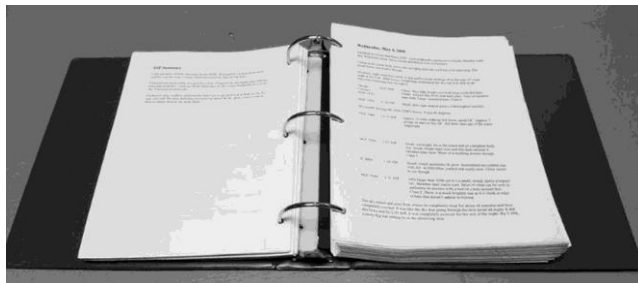
A few years ago, I started a second 2-inch binder of these printed logbook pages.

Remember my goal of observing 10,000 unique celestial objects?

With all my observed objects now recorded in ST4's database, I can measure the progress I have made towards completing my observation goal. I use ST4's ability to count the different *class* of objects. I click each class of object and enter the number of observed objects into an Excel spreadsheet I use to support my observing goal.
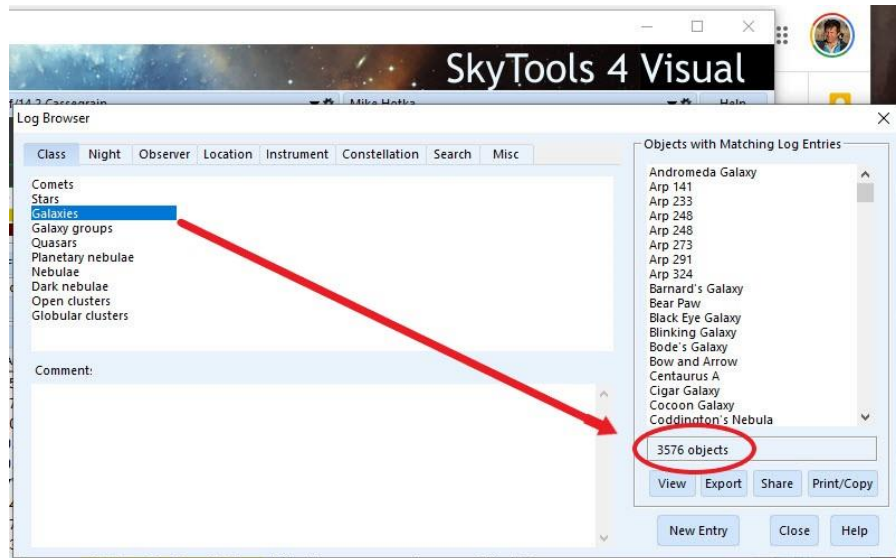
Once I am done with entering all these class object counts into the corresponding cells of the spreadsheet, it automatically calculates the current number of unique celestial objects observed (count circle in red in the below image):

I can easily see the progress I have made towards completing my observation goal.

Now I am done with this most recent observing session. With all these observations logged in the ST4's database, I can start planning my next outing of objects I have yet to see.

This process I describe in last month's and this month's articles is a process I've developed over the years. I described it in detail so that you might adjust my process, or create a process of your own, that will work for you. Regardless, you need an automated way to keep track of what you have observed, and depending on your astronomical goal(s), to summarize these observed objects in a way that you can see the progress towards completing your goal(s).

An alternative to using ST4 to record your observed objects is to use an Excel spreadsheet. This kind of spreadsheet can contain all the objects you wish to observe and with embedded equations, can easily calculate the number of objects observed.

My current observing project is to view double stars. I have accumulated a total of 3965 double stars I will observe. I still use ST4 to log a record of my observed stars, but I also keep a separate Excel spreadsheet of the many double star lists I have accumulated over the years. The bottom of this Excel spreadsheet double star list is as follows:

B3970 f_x =(COUNTA(A3:A3967))+B3977

	A	B	C	D	E	F	G	H	I	J	K	L	M	
								Mitsky	Bino	Adv	AL	Mul	Her	
1	Date	Time	Con	RA	Dec	Name	Other Name	Double	DS	DS	DS	Stars	500	Description
2														
3956			Vul	20:14:30	+24d50m00s	STT 402								"Mags 7/10.5 Sep 15.4 PA 33 Spect B9"
3957			Vul	20:15:18	+25d35m00s	BU 983								"Mags 6/10 Sep 0.7 PA 166 Spect B3"
3958			Vul	20:17:30	+29d08m00s	BU 441	Burnham 441	Y						"COLOR Mags 7/11.5 Sep 5.9 PA 64 Spect K
3959			Vul	20:18:18	+25d38m00s	BU 985								"Mags 7/9.5 Sep 21.6 PA 356 Spect B3"
3960			Vul	20:24:12	+28d59m00s	BU 443								"Mags 7.5/11.5 Sep 14 PA 138 Spect A5"
3961			Vul	20:31:54	+25d48m00s	STF 2695								"Mags 6.5/8.5 Sep 0.8 PA 87 Spect A2/G"
3962			Vul	20:33:48	+28d07m00s	STF 2698								"Mags 8/9 Sep 4.4 PA 302 Spect A0 On the
3963			Vul	20:44:30	+23d55m00s	STF 2724								"Mags 8/8 Sep 2.4 PA 329 Spect G0"
3964			Vul	21:07:24	+24d29m00s	STF 2761								"Mags 8.5/9 Sep 5.6 PA 111 Spect A2"
3965	12/11/2014	18:57	Vul	21:10:36	+22d27m00s	STF 2769	Struve 2769	Y		Y				"Mags 6.5/7.5 Sep 17.9 PA 300 Spect A0"
3966			Vul	21:11:54	+24d09m00s	STT 430								"Mags 8/10 Sep 1.3 PA 205 Spect F8"
3967			Vul	21:24:06	+25d18m00s	BU 447								"Mags 6.5/11 Sep 9.3 PA 320 Spect A2"
3968														
3969														
3970		426	of	3965	Total Doubles Seen									
3971		179	of	815	Mitsky Doubles Seen									
3972		103	of	103	AL Double Stars Seen									
3973		96	of	122	AL Bino Double Stars Seen									
3974		63	of	96	AL Advanced Bino Double Stars Seen									
3975		48			AL Multiple Stars Seen									
3976		73	of	500	Herschel 500 Stars Seen									
3977		100	of	100	Cygnus 100									

From the above spreadsheet image, you can see an equation for the number found in cell B3970. Almost all the numbers in the summary lines 3970 to 3977 are driven by counting whether there is a date value in column A and whether there is a *Y* in columns H to M. In this one spreadsheet, I can monitor the progress of the Mitsky Double Star List, the Astronomical League's Binocular, Advanced and Telescopic Double Star observing programs, the Multiple Star observing program, and the 500 best William Herschel double stars he monitored in the late 18-th century.

I added this Double Star Excel spreadsheet example to illustrate how an Excel spreadsheet might be used to record you observed objects instead of a program like ST4.

I am sure there are other alternatives to ST4 or an Excel spreadsheet to keep track of what you have observed. Whatever you chose, I think it is important to know what celestial objects you have observed over the years.