

Where is M13?

"Hey Mister, where is this here thing we're looking at?"

"Harrumph! This 'thing' is M13 in Hercules, a mighty ball of tens of thousands of ancient suns, sonny."

"But where is it."

"It's that way. You can see where the scope is pointed can't you?" (Uncle Rod waves his hand in the general direction of Hercules).

"But where is it, really?"

"7700 parsecs that-a-way out in the galactic halo."

"Huh? But where is it, mister, where is it, huh?"

"Go 'way son, you bother me."

If you're a committed public star partier like me, you've probably come to dread the arrival of the Rug Rat Brigade. Sure, it's important to introduce tots to astronomy. That's where the next generation of amateur and professional astronomers will come from. But when they breeze-in, reeking of lollipops, you just *know* they are going to ask *inconvenient questions*.

"Inconvenient" both because they, like Uncle Rod's undergraduate astronomy students, always, with almost mystic insight, choose to ask a question for which you don't know the answer: "How much does the Earth weigh?" Or, even more frustrating, they'll ask a question you don't have a good *means* of answering in a way that makes sense to 'em like, well like, "*Where is M13?*"

Apparently, programmer and amateur astronomer Bill Tschummy has been in this position a few times himself. The difference is that he's set about to *do* something about answering these questions. To that end, Bill is selling an inexpensive program called "*Where is M13?*"

What does it do? The program has but one purpose; it, in Bill's words, "Helps you visualize the locations and physical properties of deep sky objects in and around the Galaxy." That's it. Don't look to "*Where is M13?*" to help plan observing sessions, locate galaxy clusters, or run CCD cameras. Its only *raison d'être* is showing where all those cool DSOs are in relation to the Sun and Milky Way.

What kind of computer do you need? This is one of the coolest things about "*Where is M13?*" It, being written in Java, works equally well on PCs, Macs, and

Linux boxes. As long as you have Java 1.4 or later installed on your 'pooter, you should be good to go.

If this sounds good, you're probably asking, "Where is it, Uncle Rod? How do I get it?" This is not (yet) a bricks-n-mortar program. What you do to get it is go to the author's website at <http://thinkastronomy.com>, download "Where is M13?" and enjoy it for ten days *free. Gratis. No charge.* If you like what you see, you can purchase a license, either by paying through Paypal or accessing another online "store" via a link on the Thinkastronomy site. When you've ponied-up, you'll be emailed an unlock code that will allow your continued use of the program. How much? A measly 19 bucks.

While 19 simoleons ain't that hard for most of us to come by in this affluent age, I know you still want to know what you get for your hard-earned money. What you get is what's shown in **Plate 1**. Once the program is installed (easy) and booted (takes a little while on my 2 gig machine, but not too long), this is what you see. You start out in the "Galaxy View" tab with a display showing two perspectives on the good, ol' Milky Way—"home" that is. One shows our galaxy face on; the other, edge-on. The position of the Sun is marked with an orange dot (I believe the documentation says "yellow," but it looks orange to me). These Galaxy View panes are equipped with X and Y sliders that allow you to position their images in order to center objects. There's also a zoom slider that allow you to, well, *zoom the images*. Moving the zoom control affects both views simultaneously.

Field of view = 69,232 light-years

Show	Name	Other Names	Type	Constellation	RA (h:m)	Dec (°')	Mag.	Size (C)	Distance (ly)
<input type="checkbox"/>	M12	NGC 6218	GC	Oph	16 47.2	-01 52	6.6	16 × 16	16,000
<input checked="" type="checkbox"/>	M13	M3, M39, Hercules Cluster	GC	Her	16 41.7	+36 28	5.9	30 × 20	25,100
<input type="checkbox"/>	M14	NGC 6402	GC	Oph	17 37.6	-03 15	7.6	11 × 11	30,300
<input type="checkbox"/>	M15	NGC 7078	GC	Peg	21 30.0	+12 10	6.4	18 × 18	33,600
<input type="checkbox"/>	M16	NGC 6611, Cr 375, Eagle Nebula	DN	Ser	18 18.8	-13 47	6.4	7 × 7	6,500
<input type="checkbox"/>	M17	NGC 6618, Cr 377, Swan Nebula	DN, OC	Sgr	18 20.8	-16 11	7.5	11 × 11	6,800
<input type="checkbox"/>	M18	NGC 6613, Cr 376	OC	Sgr	18 19.9	-17 08	6.9	9 × 9	4,100
<input type="checkbox"/>	M19	NGC 6273	GC	Oph	17 02.6	-26 16	7.2	17 × 17	28,000
<input type="checkbox"/>	M20	NGC 6614, Cr 363, Trifid Nebula	DN, OC	Sgr	18 02.6	-23 02	9.0	29 × 27	5,400
<input type="checkbox"/>	M21	NGC 6531, Cr 363	OC	Sgr	18 04.6	-22 30	6.9	16 × 16	5,200

Show Apparent Data
 Black on White
 100 objects listed out of 838

The bottom third of the screen is taken up by the object list. How many? 838. When astronomy programs like *The Sky 6* offer literally millions of deep sky wonders, I know that doesn't sound like a lot, but in practice it's plenty. I mean, how many times are you gonna wanna know where PGC 13443 is? In addition to the Messier, the database holds the Caldwell list, nearly 700 NGC/IC objects, and 100 bright stars. I never felt there was a lack of targets, and, frankly, would have been happy with even half this many for the purpose for which "M13" is intended. I suppose a case might be made for including the entire NGC, but I am generally pleased with what the author has chosen for the database.

A "Sky View" tab complements the dual Milky Way display. This is a familiar-looking equatorial layout of the constellations, though it's different from what you usually see in that it's labeled in galactic latitude and longitude rather than RA and declination. The stars shown are from the Yale Bright Star Catalog and are connected by classic constellation "stick figure" lines. Like the Milky Way views on the previous tab, Sky View is equipped with positioning and zoom sliders. Let's go back to the Galaxy View tab now, as that's where we'll spend most of our time.



That's *what* there is, but *how* do you use it? The first thing you do is bring up a list of interesting objects. Messiers are the usual public star party fodder, so let's begin there. Look down toward the bottom of the screen. Yeah, right over there...on your right. See that button labeled "set filters"? Give it a good poke. Up comes the object filter dialog as seen in **Plate 2**. I don't think much explanation is needed, as its use is pretty intuitive. If you just want to see the Messiers, you tick only the "Catalogs" box that says "Messier." If you want to restrict yourself to only

some types of Messiers (or whatever), you can do so by ticking one or more of the "object type" boxes on the left. When you're done, you should have a list of all the Messiers. Yep...all 108 of 'em.

Now wait one consarned minute, I thought there were 110 Messiers?

Well, sorta. The deep sky fanatics who came after ol' Charles expanded his original list of 102 fuzzies all the way out to 110. Some of these additional objects are a wee bit controversial, and there's even uncertainty about some of the initial 102. The author of "Where is M13?" has chosen to exclude one of the most

contentious of these objects, one that probably shouldn't be in any Messier list, M102.

While a couple of generations of amateur (and professional) astronomers have sought to identify M102 with a Draco galaxy, NGC 5866, it's pretty clear, given the strong historical evidence we have, that M102 was simply a mistaken re-observation of M101 by Messier's good-buddy, Pierre Mechain. That being the case, I think Mssr. Tschummy is more than justified in excluding it from "his" Messier list. Don't like that? NGC 5866 is in the program's database, so you can have your cake and eat it too. OK. That's all the Messiers, right? Uh-uh. That makes only *109*.

A scan through the list reveals that M40 is also missing. M40 ain't much. It's just a faint double star that Chuck found when sweepin' an area in Ursa Major for a reported nebula. No, tain't much. But it *is* an original Messier observation, was placed in the catalog by him, and must be tracked down by every amateur who's chasing a "complete" AL Messier certificate. Because of M40's time-honored status as a genuine Messier, I'm less enthusiastic about its absence than I am about M102's deletion.

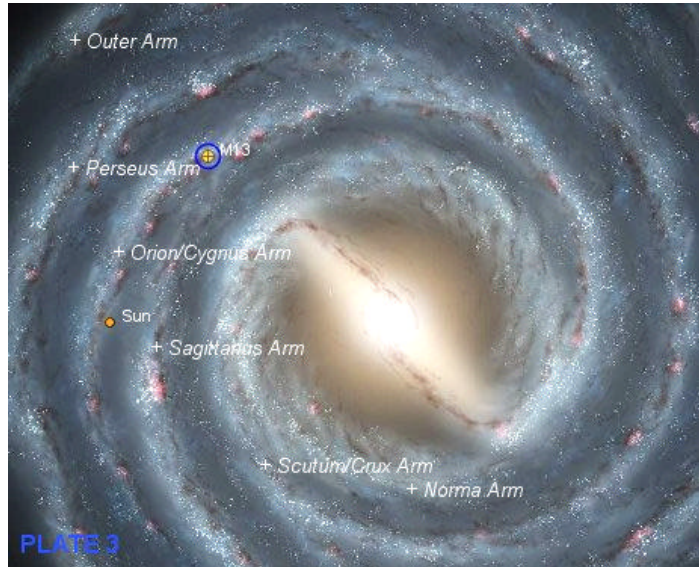
Anyhoo, you've got a list of Messiers on the screen. What do you do with 'em? The first thing you might want to do with them is *arrange* them to suit your fancy. Clicking on each column header will sort the list by that column—M number, type, magnitude, you name it. Clicking again will change that column's sort order from ascending to descending or vice-versa.

What now? You choose one or more objects, and finally get to the point of the program, *seeing where they are located with respect to our cozy little ball of rock*. How do you choose them? By ticking the box for your desired object(s) in the first column of the list (you can't just click on an object name or row, you *must* tick the box). If the Galaxy View images are zoomed and positioned so the area of the object is currently in view, your choice will appear as a yellow dot circled and labeled.

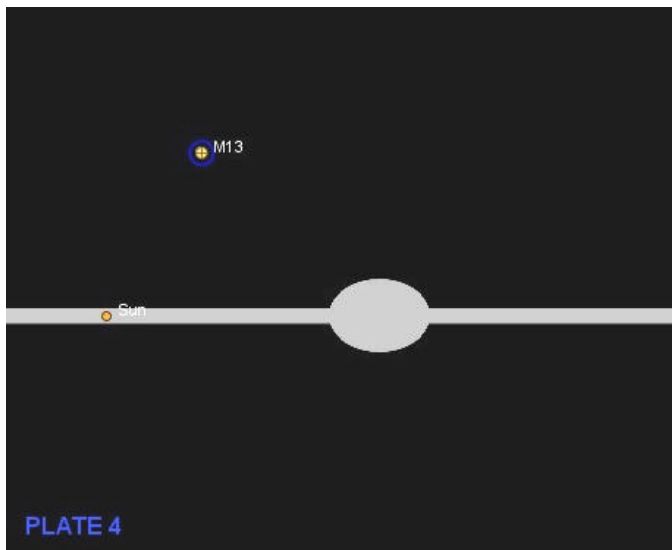
What if zoom and positioning are not right? Just go to the Windows "view" menu at the top of the screen and choose "Auto Zoom." When you do that, X – Y positioning and zoom will be adjusted to show your object and the sun (or the Milky Way if you're out in intergalactic space) onscreen. In addition to the dual galaxy displays (**Plates 3 and 4**), the program displays the size of your current field of view in light years. If you want to see where your object is located vis-à-vis the constellations, just hit the Sky View tab.

How well did all this work? Surprisingly well. The program's operation was smooth, precise, and bug-free. There were no crashes or other hang-ups—which can be very embarrassing when you're working with the public. "Where is M13?" did just what it said it would do: displayed these legendary objects' positions in relation to the Earth. The kids I showed it to were fascinated. The adults I showed it to were fascinated. Hell, *I* was fascinated. It seemed to add a whole new dimension to viewing the same, old, wonderful, shop-worn objects. Seeing the places out in the galactic halo where my favorite globs lurk, for example, was just plain wonderful.

Is the program perfect? Of course not. As with any astronomy program I've looked at from *Skyglobe 3.6* to *The Sky 6 Professional*, there are some things I don't like, and some things I wish were there that are not. Yep Uncle Rod always has to pick nits:



~~☞~~ I thought the graphic representation of the face-on Milky Way could have been in higher resolution. Zooming-in too much makes it look way pixilated. And I wish the edge-on view had had *any* resolution. As seen in **Plate 4**, it's just a featureless bar marked with the positions of objects.



~~☞~~ Selecting a galaxy doesn't do much for me unless I've selected some neighboring galaxies, too. Without anything but two spots on screen, the selected galaxy and the Milky Way, I don't get much of a sense of perspective. Maybe the program could automatically "turn on" some other galaxies in the area of the target?

That is, choose M31, and other Local Group galaxies would be automatically displayed (maybe optionally).

- ~~✍~~ The “Auto Zoom” function works pretty well (it would occasionally seem to hang up, becoming grayed-out for no apparent reason), but I wish there were a way to have it default to “on” so that selecting an object would immediately center it on the displays.
- ~~✍~~ Since one of my major uses for this program will be at public star parties, I wish it had a red, night-vision mode. In lieu of having a computer on-site, you can do nice printouts that can include more than one object per page. I like the idea of printouts, since it’s always nice to have something to give the Little Folk, but a red-display-enabled “Where is M13?” would be *cool*.
- ~~✍~~ The Sky View window is OK, but it would be nice to have the option of labeling its stars and constellations. Galaxy View allows you to label DSOs, stars, and galaxy arms, but none of this seems to affect Sky View. I couldn’t make star or constellation names appear on it, anyway.
- ~~✍~~ The “save settings” option didn’t seem very intuitive to me, and I’m still not sure if it was working correctly.

Final thoughts? Remember that, naturally, the program is only as accurate as the data the author has to work with. Directions, are pretty easy, but distances? In some cases, such as galaxies in the local group, they are pretty much pinned down. Others, like distances to planetary nebulae, should be taken with that proverbial grain of salt.

Don’t get the wrong idea from my nit-picks, though. This program is truly excellent; I just love it. I’ve wanted something like this for a long, long time. It’s fun to use in the backyard, but where it really comes in handy is, yes, with the kids. Not only can I show ‘em where that wascally wabbit M13 hangs out, “Where is M13?” keeps a wealth of likely-to-be-asked-question answers at my fingertips via its simple, clear object listing, which includes the all important (when you’ve got little folks on hand) *“how big?”* and *“how far away?”*

Bill Tschummy is not only helping answer the Little Folks’ (and their parents’) burning questions, he’s helping keep Old Uncle Rod from turning into a complete curmudgeon, and he’s making public star parties a whole lot more fun for everybody. What more could you want for one Andy Jackson?