

Connecting the Dots

Other Ways to See the Constellations

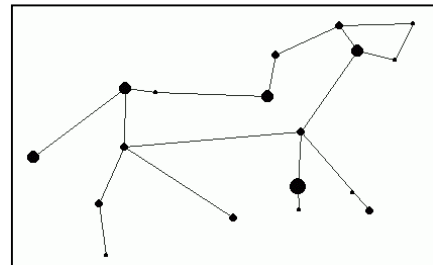
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While looking at star charts and using planetarium software you have probably noticed that the stars of the constellation are connected differently sometimes. Our present constellations are thought to have had their origins in Egypt and Mesopotamia more than 5000 years ago. With so many people and cultures involved in the development of constellations figures we probably could not have avoided getting different sets of constellation lines for the same constellation.

H. A. Rey proposed ways to draw the constellation lines in his book *The Stars: A New Way to See Them* first published in 1952. H. A. Rey and his wife Margerey were also the co-creators of the remarkable *Curious George* children's books.

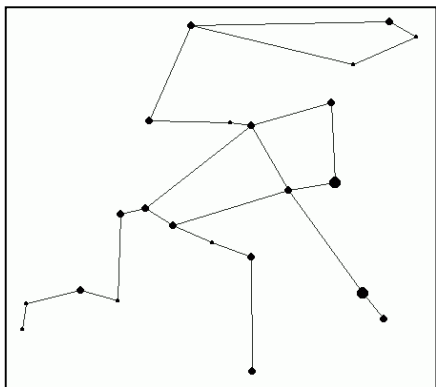
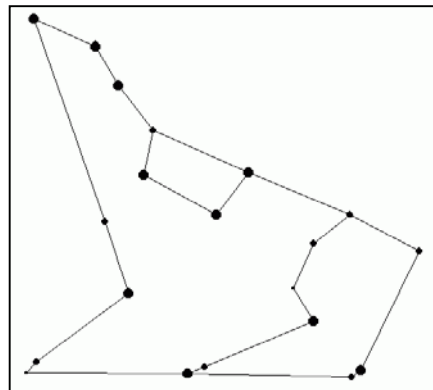
Although intended for a young audience, the book did catch the eye of Albert Einstein who wrote in a letter to the author: "Many thanks for your lucid and stimulating book. I hope it will find the interest it deserves."

You have probably seen Gemini represented as it is shown above. You may have also seen this representation of Leo shown to the right. These representations appear in Rey's book.

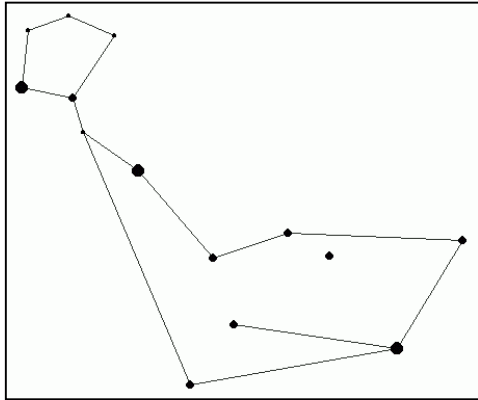


Some of Rey's representations are a bit complex, but there are many that are easy to see in the sky and - for me - takes my imagination back to the story-telling days of ages past. I particularly liked the way that Rey constructed Ursa Major.

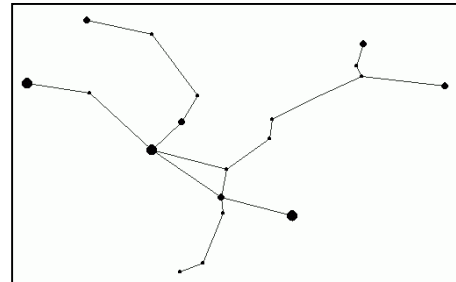
Now doesn't that look like a big bear?



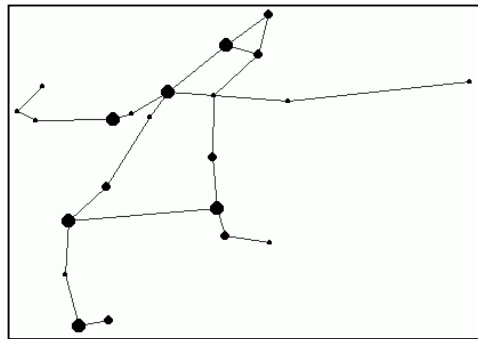
His representation of Hercules has grown on me. The familiar "key stone" of Hercules has now become the head of this hero.



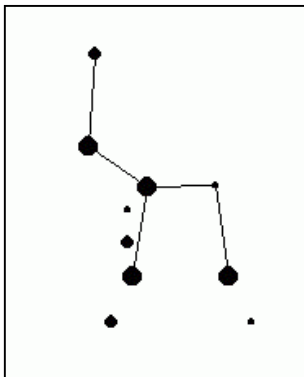
Cetus is sometimes drawn nowadays as a sea monster, but we could see this as the whale that was sent by Neptune to take the life of Andromeda.



Andromeda is shown here chained to a rock as the legend says.

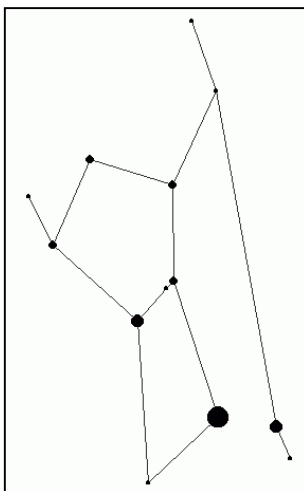
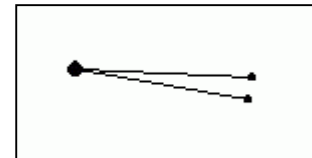


Fortunately, her fate was averted by the arrival of Perseus who turned Cetus into stone by flashing the face of Medusa before the monster. Could the Pleiades be the head of Medusa?



You may have noticed a certain pattern to the naming of the constellations. There seems to be some "sign of the times" among constellation names. The early constellations are named after creatures, warriors, princesses, a king and a queen. The throne of Cassiopeia is show to the left.

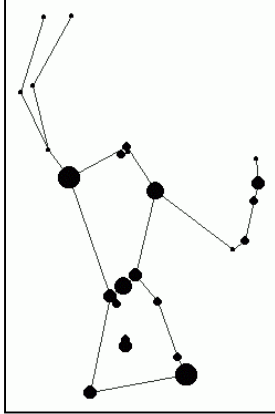
Later constellations are named after instruments of science like the telescope, the sextant, the compass, and a clock. These are generally fainter small constellations like Circinus, the drawing compass, show to the right.



Rey shows Bootes, the herdsman, sitting down and smoking a pipe. After some research I tried a different configuration for Bootes.

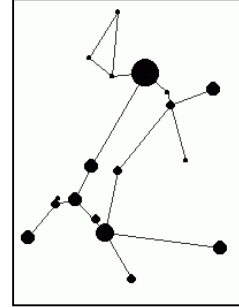
To me this looks somewhat like Orion. But instead of holding a weapon and a shield, Bootes holds a staff. The name Bootes may be connected with a Greek word meaning "noisy" or "clamorous", referring to the shouts of a herdsman to his animals.

"Arcturus" is a Greek word meaning "bear guard." This name for the star is undoubtedly connected with its position just to the east of the Ursa Major. The head of the herdsman Nekkar (Beta Bootes) means "cattleman". Epsilon Bootes has the name Mirak which means "loins" or "loincloth". The star at the bottom of the staff of Bootes is called Muphrid, which means "isolated one of the lance-bearer". Perhaps these star names give us clues to how early astronomers saw this constellation.



There are many stories that connect the 88 constellations in the sky. These stories can still be useful to professional astronomers as well as amateur astronomers. The tales of battles in the sky can serve as mnemonic devices to help us know when our quasar, supernova, or minor planet will be in view - unless we rely completely on our software for our predictions!

The art of connecting stars in the sky will never be completely lost to science. There is really no wrong way to connect the stars that make the constellations, but if we try to use configurations that more resemble what the constellation names imply we can perhaps hold on to our legends in the sky.



REFERENCES

1. H. A Rey, *The Stars: A New Way to See Them*, Enlarged World-Wide Edition, Houghton Mifflin Company, Boston, 1980.
2. Star Names, <http://www.ras.ucalgary.ca/~gibson/starnames/starnames.html> .
3. SFA Star Charts, PDF Files, <http://observe.phy.sfasu.edu/> .

The figures in this article were made using Microsoft Excel with macros by the author. See <http://observe.phy.sfasu.edu/> for other examples. Dan Bruton (astro@sfasu.edu) teaches physics, astronomy and engineering at Stephen F. Austin State University and works that SFA Observatory in Nacogdoches, Texas.