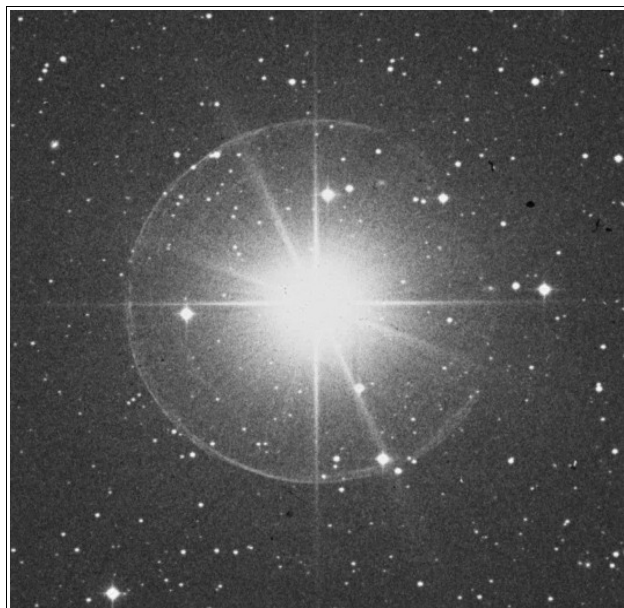


Star-struck

*Star light, star bright,
First star I see tonight,
I wish I may, I wish I might
Have the wish I wish tonight.*



Sarin, Hercules

I wish I might get the leg of this telescope stand to come unstuck. One of the slotted flanges that steady the three wooden legs is jammed and the whole thing, tube and all, won't stay upright.

On the top of this hill in Troy, Maine, I can see a huge expanse of stars above me, and even in the September chill it's sending cosmic shivers down my spine. I can make a lot of sense out of starlight, poetry and the distance from here to Saturn, but this simple tripod, which Leonardo da Vinci would have compared to a kid's erector set, is severely challenging me.

I've set up this small telescope hundreds of times. Tonight I can't even loosen the wingnut that pins the flange. Last time, a clamp seemed

stripped and the 30-inch-long tube kept slipping down. A little while later it got tired of the joke and unfroze by itself.

I pull and twist at the wingnut and the flange, and work the wooden leg back and forth hoping something will come loose without breaking. Suddenly the leg and mount part company, and now I'm kneeling in the dark with the heavy mount and tube teetering in one hand and the leg clutched in the other.

"Jack," I say. "Can you help me out, here?" Jack, my 14-year-old son and stargazing assistant, has been unpacking lenses, filters and star maps from the car nearby.

"What's broken this time, Dad?" he says.

"Can you just grab the mount and hold it?"

He takes the tube and mount, and I push the leg back in. The flange slides easily back and forth now, no one knows why, and I tighten the wingnuts that steady the tripod.

The telescope now firmly planted in the grass, I step back and look at the sky. Fall is said to be the best time for stargazing in Maine because the air is clear of the summer humidity and winter is not yet freezing your hands solid. Stars are burning up there, thousands that you can see and billions you can't. Soon we'll have an eyepiece fitted to the telescope and millions more pins of light will be revealed to us.

This is a reflecting telescope, as opposed to a refracting telescope. It works by reflecting light off a mirror (ours is 4½ inches wide) in the back of the tube, into another mirror that bounces the light up through a lens that magnifies it into your eye. A refracting telescope – with the narrow tube, like you see on the shelf at Wal-

Mart – guides the light directly into your eye by “refracting” it through lenses.

Tonight there are a few clouds and some glow from the waning moon, and no planets strike this early, but we should be able to get decent looks. Jack has readied the equipment, including binoculars, a planisphere (a plastic chart with a wheel you can adjust to show the main constellations any night of the year), maps for finding faint objects in small chunks of sky, a flashlight, and a laptop computer with a star-locating program. For regular excursions, it's good to bring a notebook too. Ours is missing from the green army pouch, but no matter.

Jack tightens the eyepiece into the sleeve protruding from the upper end of the tube. I remove the caps from the finder scope, sort of a pirate's looking-glass attached to the tube's side.

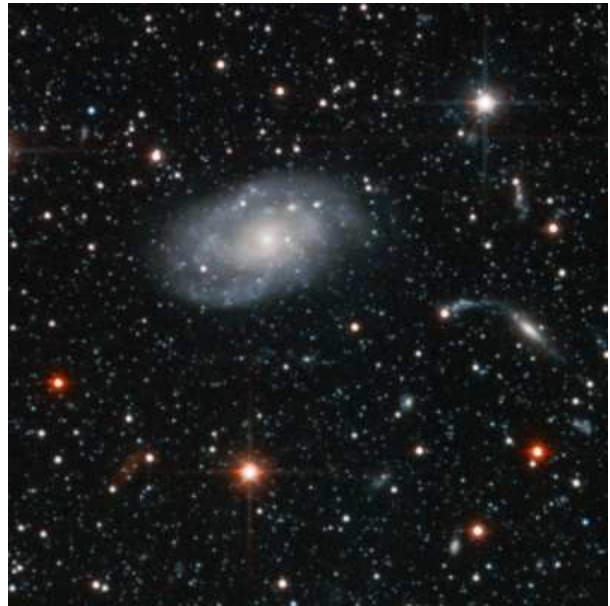
We decide to look at “the galaxy,” which is our code for the one easily seen galaxy in the Northern Hemisphere, M31 in the constellation Andromeda. You actually can see it, a faint blur, with your naked eye if you know where to look on a dark night.

I swivel the tube toward the east and kneel down to squint through the finder scope. My hat pushes the whole tube off center. This has happened 200 or 300 times, but I never seem to remember. Exasperated, I turn the hat backwards and peer into the patch of sky where M31 is located. I move the tube in circles by hand, searching.

Aha, there it is, a whitish smudge. I position it in the crosshairs of the finder scope, then stand up to look through the main eyepiece.

When you look through a telescope, you keep both eyes open. This seems like strange advice since only one eye can look through the lens. But if you train yourself to look through one eye, eventually a clearer image develops without the muscle strain involved in clamping one eye shut. It's almost a metaphysical problem, seeing through one eye with both eyes open.

I look through the eyepiece. There's the galaxy near the center of the circle. It's still just a blur, like a wisp of spit in a lake. But this is where your imagination takes over. M31 is actually a gigantic collection of stars. The sun is a star. These 700 billion suns are so far away (2.2 million light-years) that even magnified 50 times the whole bunch of them is just a cottony fuzz.



It shows up well against the black of space. I gesture for Jack to have a look.

He bends to the eyepiece.

After a few seconds he says, “Oh well.”

“What do you mean?”

“Clouds came.”

I look up. A few mackerel ribs have obscured Andromeda and four bright stars nearby, the Square of Pegasus. Dang. Until I started star hunting, I never realized how cloudy it is in Maine.

More westerly, stars are still shining. I point out the Summer Triangle – the stars Vega, Altair, and Deneb which is almost directly overhead this time of year, the faintest of the three and in the constellation Cygnus, the swan, also known as the Northern Cross. We point the

telescope at Vega. It may well have planets revolving around it, but all we see in the eyepiece is a crystal white dot. It's burning up there, relatively nearby at 26 light-years away, but even that distance is too large for the telescope to make any difference whatsoever in size. In fact, while the image is sharper, the star looks even smaller there in the telescope blackness.

The stars overhead seem to swim across the circle of view at about the speed of a watch's minute hand, because the Earth is turning. So I twist two knobs to bring Vega back to the middle of the circle. Jack peers into the eyepiece.

"I know it's not Final Fantasy," I say. "But it's a lot better for your soul."

We swivel the scope around toward the northern stars, which are seen year round – the seven main stars of Ursa Major, also known as the Great Bear or Big Dipper, and above it Ursa Minor, the Little Dipper. The cold-white star at the end of its handle is Polaris, just about due north all the time, around which all the stars turn. In about 12,000 years, a certain slow wobble of the Earth will have shifted Polaris away and made Vega the North Star. Wheels within cosmic wheels.



We get the maps and flashlight out and try to make sense of the myriad of white specks in Ursa Major. There's galaxies in them thar stars. Mostly too faint for us to find quickly.

The telescope is now behaving splendidly, even for a machine. Or is it just that I'm relaxing

in the chill and starlight? I peer at the double star Mizar-Alcor in the joint of the Dipper's handle.

Something brushes my pantleg. I look down. Great.

"Don't move," I say.

"Why?"

"Skunk."

Jack instinctively bolts, and the skunk raises its tail. Oh man, there's no choice now but to run. I leap like a cat – even fiftysomething guys like me can jump when push comes to skunk – and we dive into the car.

After a few minutes Jack sweeps the telescope-centered encampment with the flashlight beam. The skunk appears to have departed, so we pile out.

The moon is rising now, and its glow faintly paints the field. It would be obliterating stars too – if any were left. But the mackerel clouds have taken over.

"Well," Jack says philosophically, "we saw quite a few stars. And the galaxy."

"The moonlight would have dimmed Mars tonight anyway."

We look at the cloud-stricken sky. This is Maine, after all. Even when we visited an expert, Peter Lord, and his souped-up 5-inch refractor last fall on Mount Desert Island which has some of the least light-polluted skies in America, the clouds still got between us and the stars.

"Well, let's pack up."

The telescope is never a problem on the way home. You pay your earthly dues, and after that the sky's the limit.

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