

## CHAPTER FOURTEEN



# Conclusion

## Sharing the Wonder

While stargazing can be a rewarding activity on a strictly personal basis and enjoyed alone, it is in sharing your observations with other people (and organizations, if you're so inclined) that its pursuit realizes its full value. As the old English proverb states: "A joy that's shared is a joy made double." At its simplest level, letting family, friends, neighbors, beginning stargazers – and even total strangers passing by – see celestial wonders through your telescope will bring not only delight to them, but also immense satisfaction to yourself. Just watch the astonishment on their face as they stare at the Moon's alien landscape or the magnificent ice-rings of Saturn or the heavenly hues of a double star like Albireo. Perhaps it will be *you* who first opens up a totally unexpected and awesome new universe to them!

Reporting observations takes you a step beyond this basic (but very important!) level into sharing what you see in the heavens with other stargazers like yourself. This course may be as simple as sending descriptions of selected celestial objects to your local astronomy club newsletter or to one of the multitude of Internet astronomy chat groups. Going even further, you may wish to submit observing notes or even entire articles to the various astronomy magazines such as *Sky & Telescope* ([www.skyandtelescope.com](http://www.skyandtelescope.com)), *Astronomy* ([www.astronomy.com](http://www.astronomy.com)), and *Astronomy Now* ([www.astronomynow.com/magazine.html](http://www.astronomynow.com/magazine.html)) for possible publication. There are also the journals of various active amateur groups, including the Webb Society, the British Astronomical Association, the Astronomical League, or the Royal Astronomical Society of Canada. If – and when – the desire to potentially contribute to our knowledge of the universe strikes you



**Figure 14.1.** A battery of large Dobsonian reflectors manufactured by Obsession Telescopes seen at one of the many local and national star parties that are so popular with stargazers today. Obsession’s large “Dobs” are widely considered to be the “Cadillac” of such instruments because of their excellent optics and fine workmanship. Courtesy of Obsession Telescopes.

through participating in such advanced activities as comet seeking, making variable-star magnitude estimates, measuring binary stars, or patrolling the brighter galaxies for possible supernova outbursts, as discussed in Chapters 11, 12, and 13, there are many national and international organizations (both amateur and professional) to which you can submit your observations. A number of the better-known and most active of these are mentioned in those same chapters, along with information for contacting them.

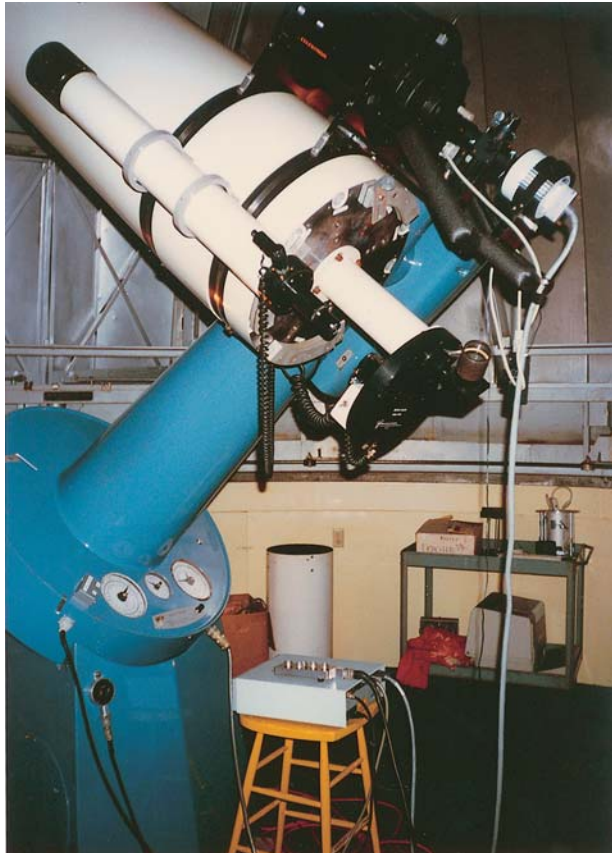
## Pleasure Versus Serious Observing

There is rampant in the field of amateur astronomy today a real belief that you must be doing “serious work” of value to science – preferably with sophisticated (and, therefore, expensive) telescopes and accessories – in order to call yourself

an observer. This is truly unfortunate, for it has undoubtedly discouraged many budding stargazers from pursuing astronomy as a pastime. The root of the word “amateur” is the Latin word *amare* – which means “to love” – or more precisely, from *amator*, which means “one who loves.” An amateur astronomer is one who loves the stars – loves them for the sheer joy of knowing them. He or she may in time come to love them so much that there will be a desire to contribute something to our knowledge of them. But this rarely happens initially. First comes a period of time (for some, a lifetime!) getting to know the sky, and enjoying its treasures and wonders as a celestial sightseer.

Certainly one of the best examples of this is the legendary American observer Leslie Peltier, who developed an early love of the stars. He went on to discover or co-discover 12 comets and six novae, and contributed over 100,000 visual magnitude estimates of variable stars to the American Association of Variable Star Observers. Born on a farm in Ohio where he made his early observations as a boy and young man, he stayed in his rural community and close to nature the remainder of his life – this, despite offers to join the staffs of several major professional observatories! If there is any reader of this book who has not already done so, I

**Figure 14.2.** A serious (really serious!) observing setup typical of that used by some advanced amateur astronomers today. The main instrument is a 16-inch Cassegrain reflector with a multi-color photoelectric photometer attached. An 8-inch Schmidt–Cassegrain and a 4-inch refractor ride piggyback, equipped for electronic CCD imaging and automatic guiding, respectively. Only one thing seems to be missing here – an eyepiece with which to look through one of the telescopes! Photo by Sharon Mullaney.





**Figure 14.3.** In stark contrast to the elaborate system shown in Figure 14.2, this basic 60-mm achromatic refractor on a lightweight altazimuth mounting typifies a telescope intended solely for the simple pleasures of leisurely stargazing. Courtesy of Orion Telescopes & Binoculars.

urge you to obtain and devour a copy of Peltier’s autobiography *Starlight Nights* (Sky Publishing, 2000), as an inspiring account of what it truly means to be a “stargazer.”

The well-known British amateur James Muirden, in his *The Amateur Astronomer’s Handbook* (Harper & Row, 1983), discusses many areas of observational astronomy in which stargazers can become actively involved with programs of potential value to the field. Yet, he wisely advises his readers to “. . . also never forget that astronomy loses half its meaning for the observer who never lets his telescope range across the remote glories of the sky ‘with an uncovered head and humble heart.’” He goes on to lament that “The study of the heavens from a purely aesthetic point of view is scorned in this technological age.” How very sad!

## Aesthetic and Philosophical Considerations

Expanding on the theme of Muirden’s comments in the previous section, for many it’s the aesthetic and philosophical (and, for some, spiritual) aspects of astronomy that constitute its greatest value to the individual. No other field of

human endeavor is so filled with inspiring vistas of radiant beauty, infinite diversity, heavenly-hued pageantry, and elevating heady adventure as is stargazing. And here as in no other field of science we have an opportunity not only to see and experience the universe at its grandest, but to come into actual physical contact with it through the amazing “photon connection.”

This is a term that I coined in the June, 1994, issue of *Sky & Telescope* magazine. It involves the fact that the light by which we see celestial objects such as stars and nebulae and galaxies consists of photons, which have a strange, dualistic nature. They behave as if they are *both* particles and waves – or particles moving in waves, if you like. Something that was once inside that object has traveled across the vastness of space and time, and ended its long journey on the retina of your eye. *You are in direct physical contact with the object you are viewing!* Little wonder the poet Sarah Teasdale in looking at the stars said, “I know that I am honored to be witness of so much majesty.”

Stargazers themselves have been variously referred to over the years as “Naturalists of the Night,” “Harvesters of Starlight,” “Time Travelers,” “Star Pilgrims,” and “Citizens of Heaven.” And here we conclude this book by sharing the thoughts of such as these – from observers of the sky past and present, both amateur and professional – for your contemplation. As you let these words penetrate your mind and heart, you’ll come to find that path to the heavens that’s ideally suited for you in your ongoing cosmic adventure as “one who loves” the stars!

“A telescope is a machine that can change your life.” – Richard Berry

“Stargazing is that vehicle of the mind which enables us all to roam the universe in what is surely the next best thing to being there.” – William Dodson

“But let’s forget the astrophysics and simply enjoy the spectacle.” – Walter Scott Houston

“I became an astronomer not to learn the facts about the sky but to feel its majesty.” – David Levy

“I am because I observe.” – Thaddeus Banachiewicz

“Even if there were no practical application for the serene art of visual observing, it would always be a sublime way to spend a starry night.” – Lee Cain

“To me, astronomy means learning about the universe by looking at it.” – Daniel Weedman

“Astronomy is a typically monastic activity; it provides food for meditation and strengthens spirituality.” – Paul Couteau

“Astronomy has an almost mystical appeal. . . . We should do astronomy because it is beautiful and because it is fun.” – John Bahcall

“The great object of all knowledge is to enlarge and purify the soul, to fill the mind with noble contemplations, and to furnish a refined pleasure.” – Edward Everett

“The true value of a telescope is how many people have viewed the heavens through it.” – John Dobson

“The appeal of stargazing is both intellectual and aesthetic; it combines the thrill of exploration and discovery, the fun of sight-seeing, and the sheer joy of firsthand acquaintance with incredibly wonderful and beautiful things.” – Robert Burnham, Jr.

“Whatever happened to what amateur astronomers really care about – simply enjoying the beauty of the night sky?” – Mark Hladik

“I would rather freeze and fight off mosquitoes than play astronomy on a computer.” – Ben Funk

“Were I to write out one prescription to help alleviate at least some of the self-made miseries of mankind, it would read like this: ‘One gentle dose of starlight to be taken each clear night just before retiring.’” – Leslie Peltier

“The high-tech devices pervading the market are ruining the spirit of the real meaning of recreational astronomy – feeling a close, personal encounter with the universe.” – Jorge Cerritos

“The sky belongs to all of us. It’s glorious and it’s free.” – Deborah Byrd

“Time spent with 2-billion-year-old photons is potent stuff.” – Peter Lord

“We are needy, self-absorbed creatures whose fundamental instincts are for survival and propagation. Any time we can transcend the tyranny of our genes is precious, and the night sky is a portal to this transcendence.” – Peter Leschak

“To me, telescope viewing is primarily an aesthetic experience – a private journey in space and time.” – Terence Dickinson

“Observing all seems so natural, so real, so obvious. How could it possibly be any other way?” – Jerry Spevak

“As soon as I see a still, dark night developing, my hear starts pounding and I start thinking ‘Wow! Another night to get out and search the universe.’ The views are so incredibly fantastic!” – Jack Newton

“Take good care of it [your telescope] and it will never cease to offer you many hours of keen enjoyment, and a source of pleasure in the contemplation of the beauties of the firmament that will enrich and ennoble your life.” – William Tyler Olcott

“The amateur astronomer has access at all times to the original objects of his study; the masterworks of the heavens belong to him as much as to the great observatories of the world. And there is no privilege like that of being allowed to stand in the presence of the original.” – Robert Burnham, Jr.

“But it is to be hoped that some zealous lover of this great display of the glory of the Creator will carry out the author’s idea, and study the whole visible heavens from what might be termed a picturesque point of view.” – T.W. Webb

“But aren’t silent worship and contemplation the very essence of stargazing?” – David Levy

“Adrift in a cosmos whose shores he cannot even imagine, man spends his energies in fighting with his fellow man over issues which a single look through this telescope would show to be utterly inconsequential.” – Dedication of Palomar 200-inch Hale Telescope.

“How can a person ever forget the scene, the glory of a thousand stars in a thousand hues . . .?” – Walter Scott Houston

“Seeing through a telescope is 50 percent vision and 50 percent imagination.” – Chet Raymo

“A night under the stars . . . rewards the bug bites, the cloudy nights, the next-day fuzzies, and the thousand other frustrations with priceless moments of sublime beauty.” – Richard Berry

“All galaxies [and other celestial wonders!] deserve to be stared at for a full fifteen minutes.” – Michael Covington



“It is not accident that wherever we point the telescope we see beauty.” – R.M. Jones

“You have to really study the image you see in the eyepiece to get all the information coming to you. Taking a peek and looking for the next object is like reading just a few words in a great novel.” – George Atamian

“We as astronomers can always retreat from the turbulence around us to our sanctum sanctorum, the sky.” – Max Ehrlich

“The night sky remains the best vehicle of escape I know. Simply . . . staring up at a crystal clear sky takes the weight of the world off your shoulders.” – Victor Carrano

“What we need is a big telescope in every village and hamlet and some bloke there with that fire in his eyes who can show something of the glory the world sails in.” – Graham Loftus

“Someone in every town seems to me owes it to the town to keep one [a telescope].” – Robert Frost

“The pleasures of amateur astronomy are deeply personal. The feeling of being alone in the universe on a starlit night, cruising on wings of polished glass, flitting in seconds from a point millions of miles away to one billions of light-years distant . . . is euphoric.” – Tom Lorenzin

“I’m a professional astronomer who deeply loves his subject, is continually in awe of the beauty of nature [and] like every astronomer I have ever met, I am evangelistic about my subject.” – Frank Bash

“Nobody sits out in the cold dome any more [at Palomar – and nearly all other professional observatories today!] – we’re getting further and further away from the sky all the time. You just sit in the control room and watch television monitors.” – Charles Kowal

“There is something communal and aesthetically rapturous about original archaic photons directly striking the rods and cones in my eyes through lenses and mirrors. . . . These same photons now impinging on my retina left ancient celestial sites millions of years ago.” – Randall Wehler

“Some amateur astronomers, it is said, experience the ‘rapture of the depths’ when observing the Andromeda galaxy.” – Sharon Renzulli

“We have enjoyed knowing the stars. We are among the thousands who have found them old friends, to which we can turn time after time for refreshing thoughts and relief from the worries and troubles of every-day life.” – Hubert Bernhard, Dorothy Bennett, and Hugh Rice

“How could I convey the mystical love I feel for the universe and my yearning to commune with it? Gazing into the beginning of everything, we are young once again. The child within us is set free.” – Ron Evans

“I believe that in looking out at the stars we meet deep psychological and spiritual needs.” – Fr. Otto Rushe Piechowski

“Spending a dark hour or two working through the starry deeps to catch faint, far trophies is remarkably steadying for the soul. The rest of the world falls away to an extent only realized upon reentering it, coming back with a head full of distant wonders that most people never imagine.” – Alan MacRobert

“The universe seems to demand that we stay in a state of continual astonishment.” – K.C. Cole

“. . . the spell with which Astronomy binds its devotees: the fascination and the wonder, not to be put into words, of the contemplation and the understanding of the heavens.” – G. de Vaucouleurs

“I can never look now at the Milky Way without wondering from which of those banked clouds of stars the emissaries are coming.” – Sir Arthur Clarke

“To turn from this increasingly artificial and strangely alien world is to escape from *unreality*. To return to the timeless world of the mountains, the sea, the forest, and the stars is to return to sanity and truth.” – Robert Burnham, Jr.

“Lo, the Star-lords are assembling, And the banquet-board is set; We approach with fear and trembling, But we leave them with regret.” – C.E. Barns