



A Letter From the President

Dear fellow member,

Another summer is almost at an end, a summer which has been replete with rich and rewarding experiences in the life of our Society. Our star parties have been well-attended and enjoyed by our members. Substantial progress on the Society observatory in Lockwood Valley is being made, and there is reasonable cause to think we'll be able to finish it within another year. Summer meetings were held by the L.A.A.S. for the first time in many years. And in Riverside last month we enjoyed one of the best W.A.A. and A.L.P.O. conventions in recent memory, hosted by the Riverside Astronomical Society.

A lengthy narrative of the events of the convention would be inappropriate, as many of you were there and experienced them personally. But it is worth mentioning a few of the high spots of the four-day conference. Dr. William J. Kaufmann of Griffith Observatory opened the convention with a Morrison lecture on black holes and curved space-time. This was a prelude to a number of excellent paper sessions whose topics covered numerous and diverse phases of astronomy and telescope making. A pair of extremely well-planned field trips to Big Bear Solar Observatory and the Goldstone tracking station attracted nearly a hundred participants each on the second and third days of the convention, respectively. A sumptuous banquet and an entertaining after-dinner speech by Bruce Blair Award winner Clinton B. Ford capped the events of a four-day meeting of fellow amateurs that will long be remembered. Next year's W.A.A. convention is set for the city of San Diego (dates have yet to be announced), and our Society has the responsibility and the honor of hosting this event in the summer of 1974.

With this month's meeting your Society returns to its winter quarters, Griffith Planetarium. Our September general meeting will be held there this coming Monday evening, September 11th. As our speaker we are most fortunate in having prevailed upon our program chairman, Mr. Thomas Cragg of Hale Observatories, to present one of his "tour of the heavens" talks with the aid of the Zeiss projector at the Planetarium. These programs, which Tom has presented in the past on the summer skies, have become something of a legend among those lucky enough to have heard and seen them. Tom brings to his topic the benefits of many years of amateur and professional skywatching, and invariably stimulates viewers' interests and imaginations by pointing out dozens of fascinating celestial objects. I have always come away from these presentations with a whole list of objects I can see with my telescope that I never knew about before. I can promise you that Tom's tour of the autumn and winter skies will be one of the programs you will like and remember the longest. See you at the meeting...

*-Art Johnson
President, L.A.A.S.*

Dates on the L.A.A.S. Calendar

- September 9, Saturday evening.....Monthly Star Party at Lockwood Valley Property
- September 11, Monday, 7:45 p.m.....Monthly General Meeting at Griffith Observatory
Speaker: Thomas Cragg, Hale Observatories
- September 16, Saturday evening.....Public Star Party at Cheviot Hills Playground, West L.A.
- September 25, Tuesday, 7:30 p.m.....Board of Directors meeting at home of Tom Cragg,
Mt. Wilson, Ca. Board members see Mr. Cragg for directions.

Public Star Party in Town on September 16

The Society will hold a star party September 16 at Cheviot Hills Playground in West Los Angeles. We will be observing Jupiter, Saturn, and the first-quarter moon. This star party is being widely advertised on radio and in newspapers as open to the public, and we hope to interest others in joining the L.A.A.S. The 14½ inch telescope will be there for observation of the planets by members and the public. It is essential that we have a good turnout of our own members with their telescopes on this occasion. It would hardly speak well of our Society if only a few members came to this "showcase" event. So please plan to come and bring your telescope and be ready to talk up our group to our visitors. Anyone who can supply displays of astrophotography, astro-art, equipment, or other materials of interest is requested to contact Walt Deutsch at 479-1889 or Mike Simmons at 345-1243 immediately.

This is a chance to participate and help your Society too. We'll expect to see all of you out there with your scopes on September 16.

-Mike Simmons

Relativity and Cosmology Course

A non-technical course in relativity and cosmology will be offered by UCLA Extension from October 2 to November 6 in six Monday evening sessions on the UCLA campus. The course, taught by Dr. William J. Kaufmann, Director of Griffith Observatory and an expert on relativity, will cover such topics as black holes, travel to other universes, the shape and creation of the universe, and current astronomical observations. The fee for this one-unit course is \$20. For further information, telephone 825-2401.

A Word to the Wise at Star Parties

It has come to the attention of the Board of Directors that some individuals have been guilty of discourtesies to fellow members at Society star parties. It seems a trifle unnecessary that rules of proper conduct should even need be mentioned here. But by the same token the loud and boisterous behavior that has offended a number of members and visitors was equally uncalled for.

Surely it is realized that no one is expected to be absolutely quiet during a star party. Normal conversation and perhaps music or radio played at a low volume level ought not to be cause for complaint. Star parties are, after all, intended as occasions for observing the sky in the good company of one's fellow astronomers, not as camping trips *per se*. The absolute silence that is expected at late hours in ordinary campgrounds is not the strict rule at L.A.A.S. star parties. However, the considerations of common courtesy do dictate that we at all times, and especially when it is very late, refrain from making any more noise than we can possibly avoid. And *at no time* is there any possible excuse for the kind of language, conversation, or behavior that can cause others to be offended.

The Star Members provide a Star Party Director at each such function. If you believe that these common-sense rules of good taste and good conduct are being violated, you are always to feel free to bring such matters to his immediate attention. The Star Party Director for the September 9 event is Mr. Lewis Chilton.

Enough said.

—Art Johnson

ARTICLE: Magnification Factors using Eyepiece Projection

When photographing small objects such as fine lunar detail and the planets, the prime-focus image must be magnified. The most common method is by eyepiece projection. The magnification factor must be known to correctly expose the film. When using the graphical method given in the July 1972 issue of the *Griffith Observer*, the effective focal ratio is the prime focal ratio multiplied by the magnification factor. The exposure time may have to be increased by a few per cent. to allow for light lost in the eyepiece. The amount will have to be determined by experimenting with the individual eyepieces.

The magnification factor is a function of the eyepiece focal length (F_e) and the eyepiece-to-final-image distance (D_i). The expression for the magnification factor (M) can be found using the basic optical equations found in physics or optics texts. The resulting equation can be found in Sam Brown's book *All About Telescopes*. The form of the equation I use is slightly different from that Sam Brown uses, but it is the same after some algebraic manipulation. The magnification factor is given by: $M = (D_i/F_e) - 1$. This equation covers any combination of focal length and distance and will work well for a pre-calculated set of conditions. In the field, however, using the equation is not too practical, since any change in the physical setup will have to be recalculated. Here a prepared chart would be easier and quicker to use. The graph shown is a plot of the three factors for several common focal length eyepieces. The graph shows magnifications up to 30 and image distances up to 200 millimeters (8 inches).

The plate scale can be found by multiplying the prime focus plate scale by the magnification factor. This gives: $P.S. = M(F_o/57.3)$. F_o is the focal length of the objective and is given in millimeters. The plate scale is expressed in degrees per millimeter. Further multiplication by 60 gives minutes of arc per millimeter. Thus the graph can be used to measure objects that have been photographed, but its more direct use will be in calculating exposure times for astrophotography.

—David Sovereign

