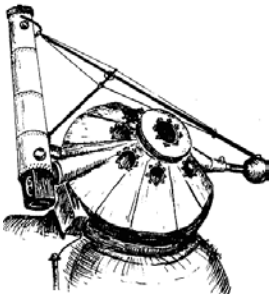
The Hartness House Workshop: Solar Astronomy



August 8, 2013

The Hartness House Inn

Springfield, Vermont

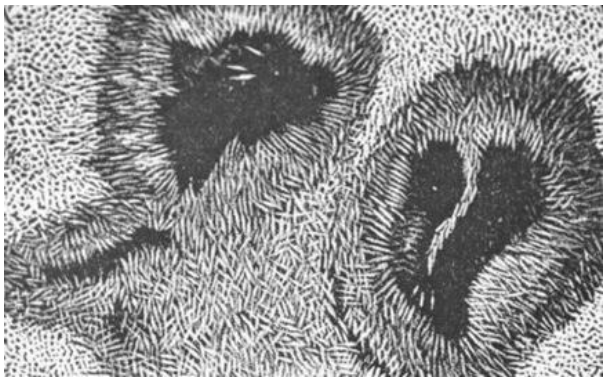
Flare Baby Flare

The age dawns, the weather fair
Nature warms, without a care
To the North, the winter's cold
A storm rages, from what I'm told
Faraway, the surface flares
Intense heat, with increased glare

A time lag, from there to here
Waves arrive, earth's atmosphere
To the North, electrons barged
Dance the sky, crystallites charged
Waves of light, to those aware
Color night, beyond compare

Warming trends, begin right there
Increased waves, excite the air
Molecules in microwaves
Together rub, and so behave
It's the same with solar flares
Greenhouse effect, but with God's care

Udiah



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Left: This remarkably detailed drawing of a single sunspot was made by the eminent American scientist Samuel Langley, in the cold, clear air of Pittsburgh, just before Christmas in 1873. Langley later became the Secretary (Director) of the Smithsonian Institution in Washington, D.C., and in the early 1900's was a pioneer in aviation. Photographs made in modern times confirm much of the detail captured by early visual observers such as Langley, who spent long hours at their telescopes to catch moments of unusual sky clarity.

Right: Charles A. Young with a prism spectroscope, at the solar eclipse of May 28, 1900, at Wadesboro, N.C.

Hartness House Workshop in Solar Astronomy
Thursday, August 8, 2013

8:30 - 9:00 **Registration and Coffee**
Host Dan Lorraine, Seagrave Memorial Observatory, Skyscrapers, Inc.

9:00 - 9:05 **Words of Welcome**
David Tabor, President, Springfield Telescope Makers

9:05 - 9:10 **Introduction**
John W. Briggs, HUT Observatory and Springfield Telescope Makers

9:10 - 9:45 **A Porter Sun telescope of 100-foot focal length**
Bert Willard, Curator, Porter-Hartness Museum of Amateur Telescope Making, Springfield Telescope Makers

9:45 - 10:00 **The prize-winning spectrohelioscope of Hal Robinson**
Kenneth J. Launie, Antique Telescope Society

10:00 - 10:15 **Stellafane's spectrohelioscope formerly of G. W. Cook Observatory**
Matt Considine, Antique Telescope Society and Springfield Telescope Makers

10:15 - 11:00 **The McMath Hulbert Observatory -- Then and Now**
Jim Shedlowsky and Tom Hagen, McMath-Hulbert Astronomical Society

11:00 - 11:20 **Coffee Break**

11:20 - 12:00 **The Sun from High Places**
Dr. David DeVorkin, National Air & Space Museum, Smithsonian Institution

12:00 - 12:45 **Buffet Lunch**

12:45 - 2:00 **Open house, Hartness Observatory and Hartness-Porter Museum**

Weather permitting, this event will feature solar observing with the Hartness Turret Telescope as well as with other historic instruments including the 100-foot Porter reflector and the Robinson spectrohelioscope. Hosts Bert Willard, David M. Groski, and Mario Antinucci, Springfield Telescope Makers; Kenneth J. Launie *et al.,* Antique Telescope Society.

2:00 - 2:45 **Looking inside the Sun: Will you be the first amateur to do helioseismology?**
Dr. John W. Harvey, National Solar Observatory, Tucson, Arizona

2:45 - 3:30 **Tuning-in to the Sun: Past, Present, and Future**
Professor Dale E. Gary, New Jersey Institute of Technology

3:30 - 4:15 **A revolutionary telescope at Big Bear Solar Observatory**
Professor Philip R. Goode, Director, Big Bear Solar Observatory
(Kindly presented by Dr. Tom Spirock, Springfield Telescope Makers)

4:15 - 5:00 **Giant Solar Telescopes of the Future**
Dr. Jacques M. Beckers, Director Emeritus, National Solar Observatory
(Kindly presented by Dr. John W. Harvey, National Solar Observatory)

5:00 - 5:15 **Break**

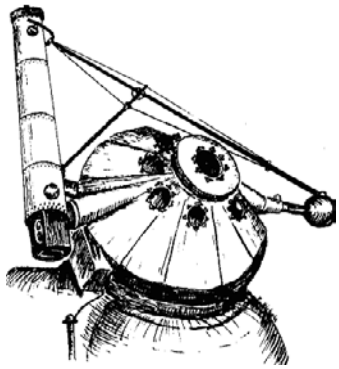
5:15 - 6:00 **Cocktails, Beer, Wine, and Cheese**
Hosted by the Antique Telescope Society

6:00 - 7:00 **Banquet at Hartness House Inn**

7:00 - 8:00 **The Sun from Rockets**
Dr. David DeVorkin, National Air & Space Museum,
Smithsonian Institution

8:30 PM **Evening open house at Hartness Observatory**

Weather permitting, this event will include evening observing and will be open to Workshop participants, members of the Springfield Telescope Makers, and guests. Our hosts are Bert Willard, Dave Groski, and other members of the Springfield Telescope Makers.



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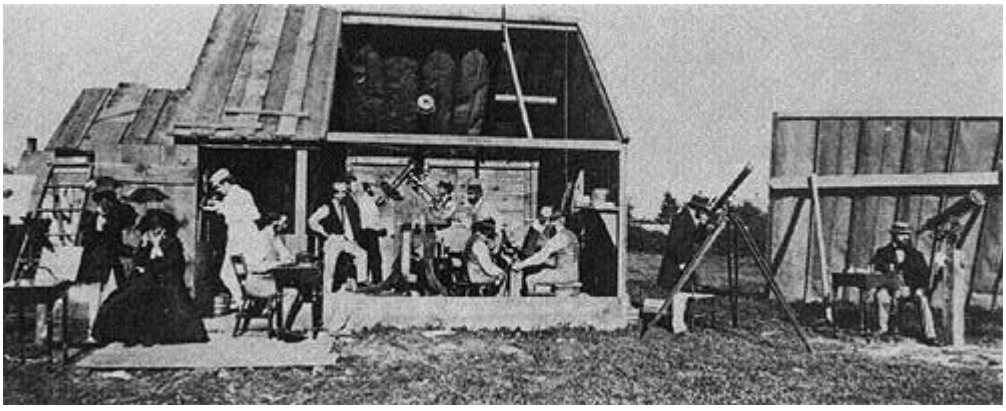
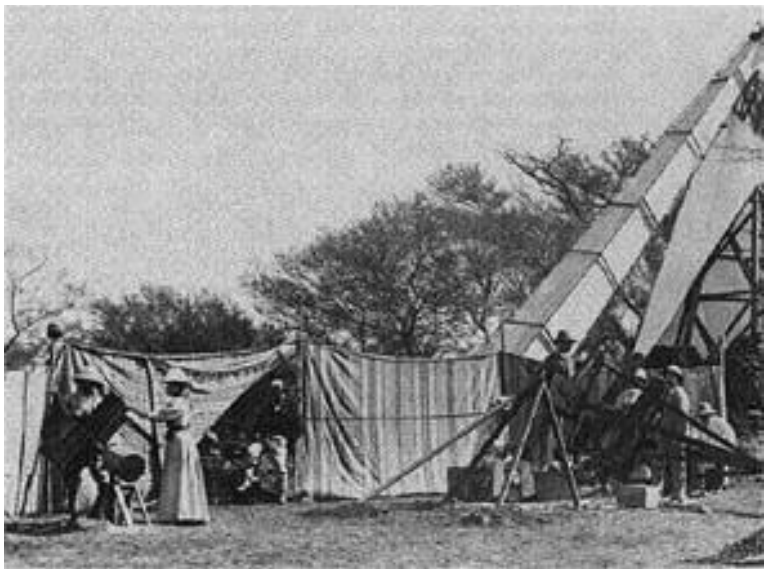
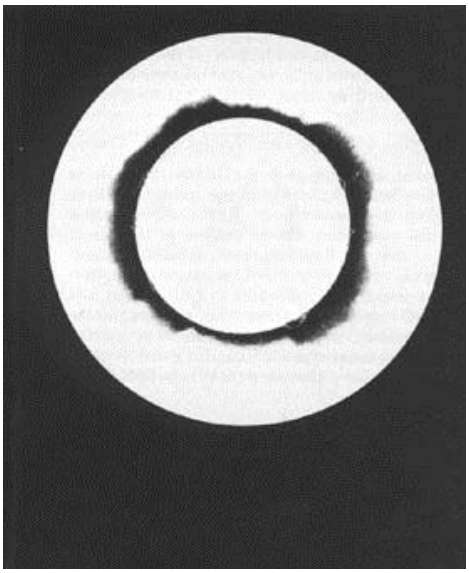
Astronomers from Princeton and the Royal Astronomical Society pose near Denver for the total solar eclipse of July 29, 1878. They had travelled far by ship and rail to see the Sun eclipsed for about 3 min. Charles Young (seated second from right) was the leader of the expedition. His discoveries at times of eclipse were highlights of 19th century solar physics.



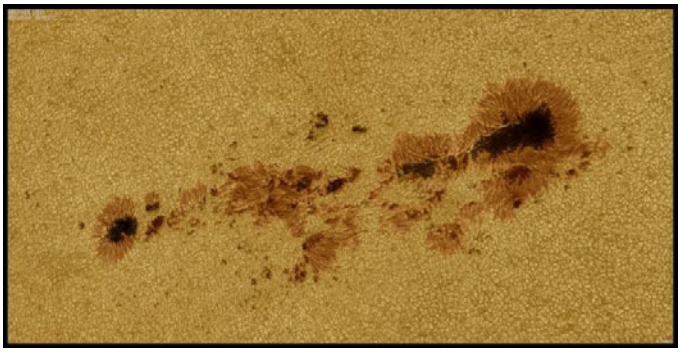
American observers pose at Burlington, Iowa, following the total solar eclipse of August 7, 1869. Included are two female astronomers, Prof. Maria Mitchell (seated) and Helen Starke, at left. At this important eclipse, Charles Young, seated, near center, discovered the green coronal emission line, which eventually led to our modern understanding of the unique conditions that exist in the corona of the Sun.

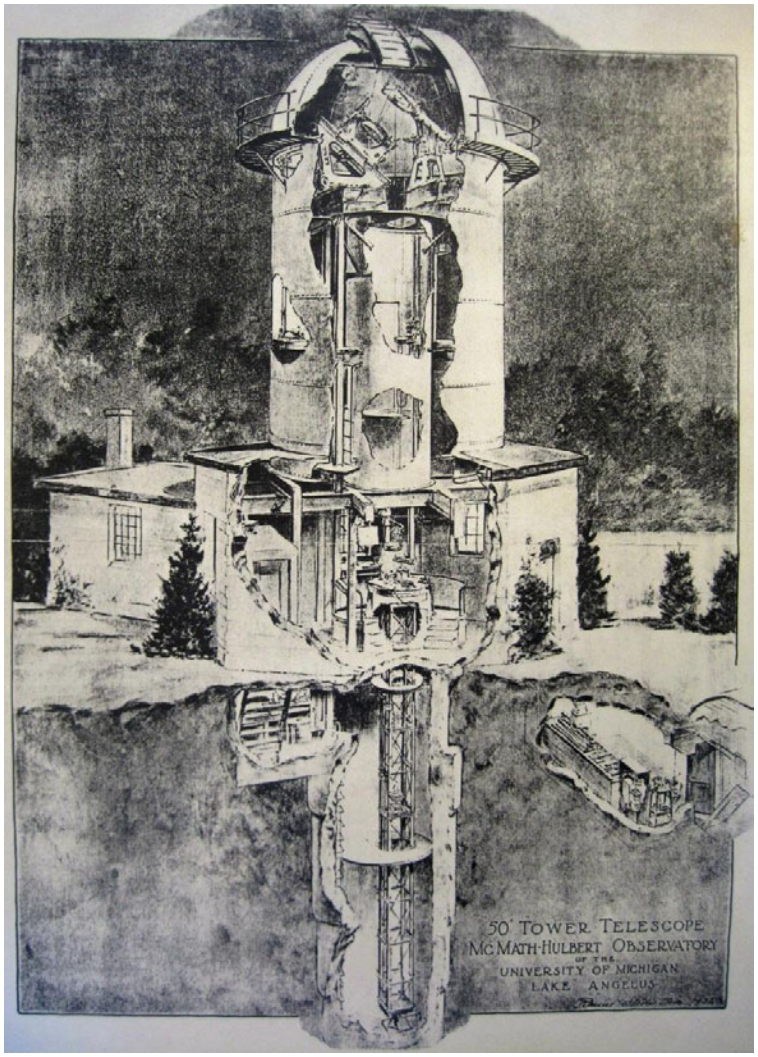




Left: Coronal camera in the days of Queen Victoria. Here the great eclipse telescope of the Lick Observatory, 12-m long, is set up on the plains of India, near Jeur, for the total solar eclipse of January 22, 1898. The great camera, called "Jumbo" by its originator, J. M. Schaeberle, was carried to nearly every total solar eclipse in every continent except Antarctica from 1893 until 1931. It was not guided and had to be pointed ahead of time to the place in the sky where the Sun and Moon would meet. At each eclipse for which skies were clear, it secured about a dozen photographs of the corona, some on glass plates 36 by 56 cm.

Right: Early photograph of the solar corona, made in Shelbyville, Ky., by the Harvard expedition to the total solar eclipse of August 7, 1869. Such pictures are of limited value today, for they show only the lowest parts of the corona, and these in poor detail. Early photographers had great difficulty capturing the elusive corona: it was diffuse and ethereal, its brightness varied from eclipse to eclipse, and there were no chances for test exposures. These pictures were made on wet plates, prepared under stress in the field as the sky darkened before eclipse totality. The corona was visible but a few minutes, and the next chance to see it was more than a year later, in Spain.





Workshop Chair and Program Coordinator: John W. Briggs

Workshop Registrar: Daniel W. Lorraine

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