ABSTRACTS

HCO: The Pickering Years
11:15 am–12:50 pm, Phillips Auditorium (CfA)

CFA.04
Edward Charles Pickering
H.N. Plotkin (U. Western Ontario)

Pickering's long and fruitful tenure as Director of the
Harvard College Observatory can be divided into three main
periods. The first begins with his appointment in 1877
and ends with the celebration of his 25th anniversary as
Director in 1902. During this time he launched the major
research projects that would not only transform the face of
Harvard astronomy, but also the nature of the discipline
itself. Among these projects were visual and photog-
graphic photometric studies of stars; photographic studies
to map the stars; spectroscopic investigations to photo-
graph, measure and classify stellar spectra; and the
establishment of a high-altitude auxiliary station in
Arequipa, Peru.

The second period, from 1903 to 1909, was a transitional
one. Although Pickering continued work on these projects,
he began to see himself in a new, larger role—as that
of ambassador to the national and international astronomical
communities. He served as President of the AAS from 1903
on, and expended much time and energy in this role. He
also devoted much time to such projects as plans to secure
and distribute funds for the endowment of scientific re-
search, to establish an international solar telescope, and
to foster international cooperation in astronomy.

During the final period, from 1910 to his death in 1919,
Pickering's main efforts were devoted to the consolidation
and standardization of the fruits of his labors. He
became actively involved in the work of the Solar Union,
and chaired some of its most important committees. As
Chairman of the Committee on the Classification of Stel-
lar Spectra and of the Committee on Photographic Stellar
Magnitudes, he endeavored to get the Harvard systems
adopted as the world standards.

CFA.05
William Pickering's Search for a Planet Beyond Neptune

P. M. Sadler (Harvard-Smithsonian CfA)

Harvard College Observatory Professor William H. Pick-
ering (1858-1938) was a controversial and prolific astronomer.
In 1880, he discovered that photographic emulsions differ
in their sensitivity to daylight and the cooler indoor "gas-
light," paving the way for the development of indoor and
outdoor films. Pickering found that the Great Nebula of
Orion was only part of a huge cloud of gas that covered
the entire constellation. In 1884, he determined that photo-
graphic film was sensitive to infrared light. He convinced
Harvard to begin a systematic astrophotographic survey of
the sky which resulted in the HCO becoming the repository
of over 300,000 glass plates of the night sky. He discovered
Saturn's moon, Phoebe, in 1898 making him the first to dis-
cover a moon using astrophotography.

Pickering spent the next 40 years of his life determined
to find a trans-Neptunian planet, a companion star to the Sun
and life on the Moon. He carried on his search for Pluto
from Harvard's Jamaica Station, living a life that most
other astronomers would envy. He raced against the better
funded Percival Lowell and his human "computers" avoid-
ing the computational difficulties in analyzing Neptune's
"residuals" by using a modification of a graphical method
invented by Sir John Herschel. When Pluto was discovered
by Tombaugh in 1930, Pickering claimed he had predicted it.
What were his arguments and why didn't Harvard defend
his claim after supporting his work for so long?

CFA.06
Strategies and Compromises: Women in
Astronomy at Harvard College Observatory,
1870-1920

P.E. MacK (Clemson U.)

A particular concept of women's work shaped the notable contributions that women made to astronomy at Harvard College Observatory in the period before the introduction of the Ph.D. program. This definition of women's work in astronomy resulted from social expectations, from the particular approach to astronomy pursued by observatory director Edward C. Pickering, and from a distinctive strategy that women took to develop a place for themselves in astronomy.

In a pattern common for women professionals
at the turn of the century, women astronomers
did not fight for jobs identical to those
held by men, but rather sought to expand the
separate role that society assigned to them.
Most women, even those who became famous for
their scientific contributions, worked
without complaint in particular types of jobs
and particular research areas that were
defined as women's work. Women were success-
ful at Harvard in part because the observ-
atory's emphasis on the accumulation of
astrophysical data increased the importance
of the kinds of work assigned to women. This
paper will focus on the various strategies
taken by women astronomers at Harvard to make
creative use of their limited opportunities.

SATURDAY AFTERNOON

HCO: The Shapley Years
2:00–4:00 pm, Phillips Auditorium (CfA)

CFA.07
Through Rugged Ways to the Galaxies

Owen Gingerich (Harvard-Smithsonian CfA)

In the wake of the "great debate" with Curtis, the Harvard admin-
istration was dubious whether Harlow Shapley was "a big enough
personality" to direct their observatory. The young Mt. Wilson
astronomer was nevertheless invited to Cambridge on a trial basis,
and within seven months he was offered the directorship. Shapley
proved to be an enthusiastic dynamo, continuing the Henry Draper
program, initiating a graduate astronomy degree program, and in
the 1930s introducing an influential summer school program to mix
astronomers with physicists. Yet he yearned to extend his earlier Mt.
Wilson researches on clusters and nebulae via a Harvard-based
observational program, in competition with the West Coast observ-
atories. When the Rockefeller Foundation provided the money for
Palomar, Shapley convinced them also to finance a 60-inch reflector
at Harvard's Boyden Station in South Africa. But lacking compet-
itive spectrographic facilities, Shapley could not directly enter the
lists for observational cosmology. Instead, using his smaller survey
instruments, he mapped the inhomogeneous distribution of galax-
ies. He probably took a sly pleasure in calling attention to these
transgalactic irregularities because they went against the assump-
tions espoused by Hubble for doing cosmology. Today the irregular
distribution of galaxies, which Shapley was beginning to delineate,
plays a major role in our understanding of the large-scale structure
of the universe.