

What Else Did V.M. Slipher Do?

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15 September 2012

Vesto Melvin Slipher (1875–1969)

**Always referred to and
addressed as "V.M."**

*All photos Lowell Observatory
Archives unless otherwise stated*



1905

I. Great Achievements under Lowell, 1901–1916

"Slipher and Lowell had complementary temperaments. The latter was brilliant, enthusiastic, and a driving personality. ... Slipher, on the other hand, was deliberate, fastidious, patient, and showed a high order of technical knowledge."

John S. Hall



Percival Lowell, 1904

Slipher thrived under Lowell's direction



V.M. with Brashear spectrograph



1905

First publication, submitted by Lowell, 1902

ON THE VARIABLE VELOCITY OF ζ *HERCULIS* IN THE LINE OF SIGHT,

COMMUNICATED BY PERCIVAL LOWELL.

Spectrograms were made of this star by Mr. V. M. SLIPHER, with the new spectroscope of the observatory in May, June and September, and the shift of the spectral lines measured with the results opposite.

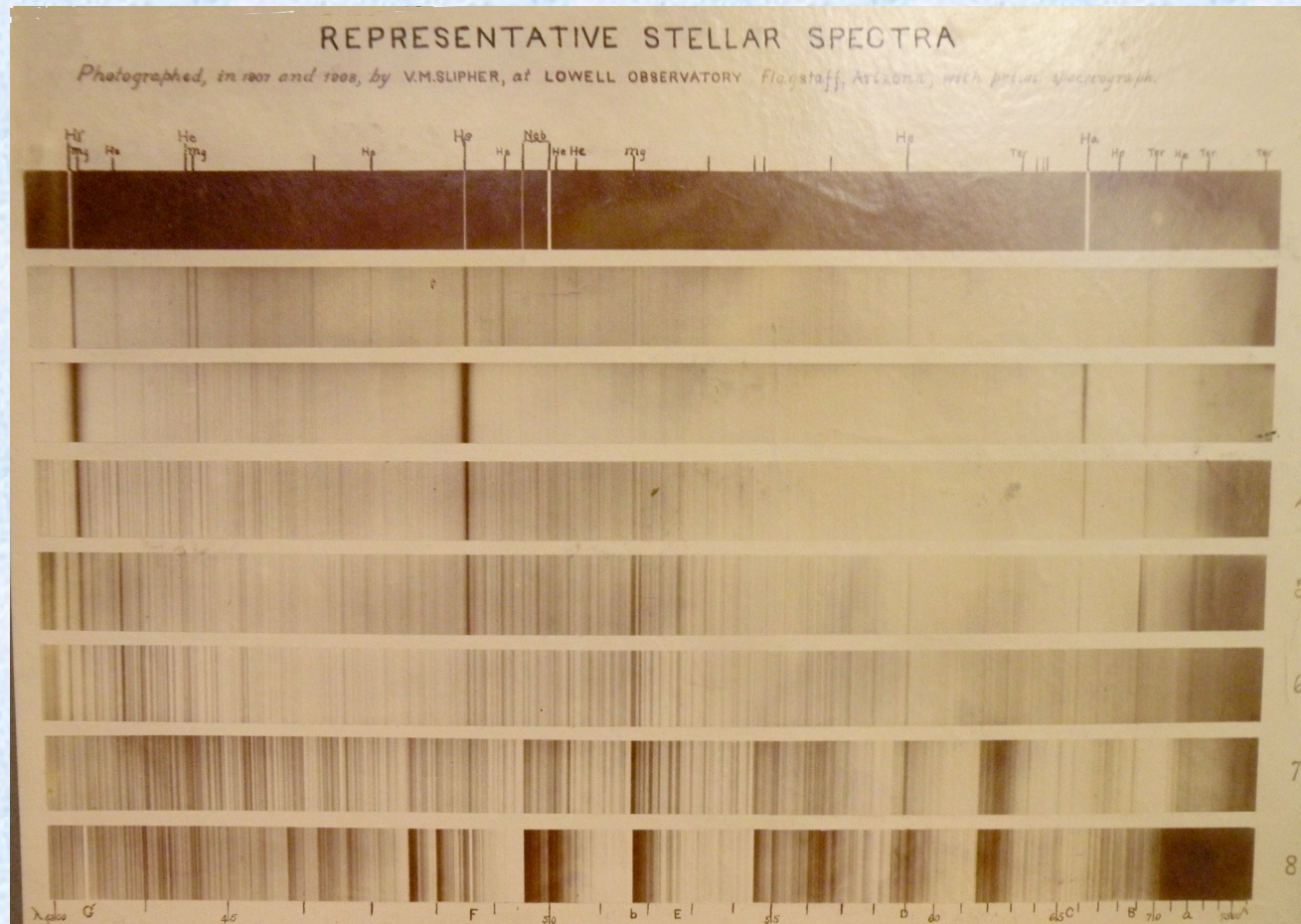
The result may be compared with that given in the Lick Observatory Bulletin, No. 20, where Prof. CAMPBELL deduces -74.6 for measures of spectrograms made between July 1, 1901, and April 13, 1902.

Lowell Observatory, 1902 October 21.

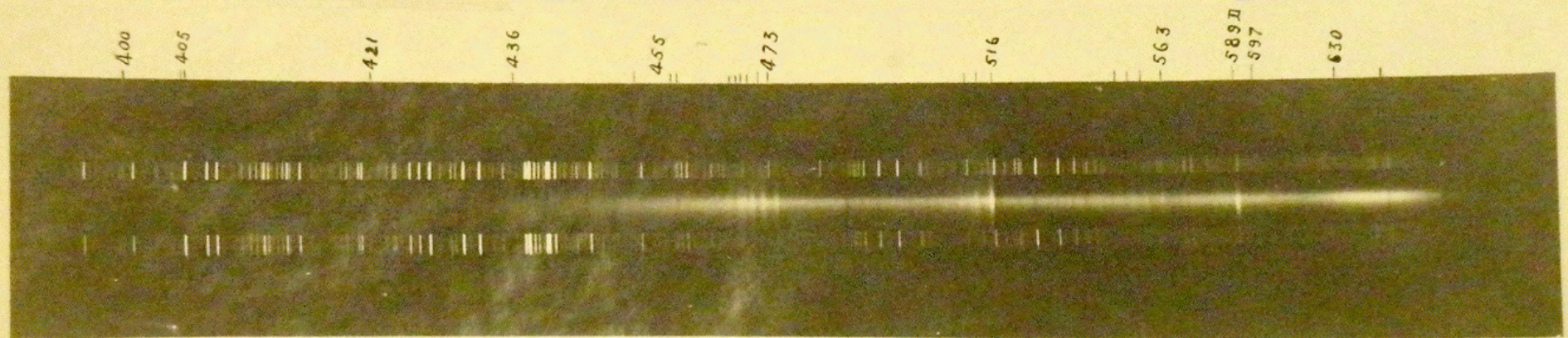
Date	Velocity	Measured by
1902 May 14	-74.0	Slipher
27	-75.7	"
June 3	-72.4	"
18	-74.3	"
Sept. 1	-74.6	"
2	-75.3	"
Mean	-74.4	

Lowell, P., *Astronomical Journal* **22**, 190 (1902).

Representative Stellar Spectra



Halley's Comet, 1910



Spectrum Halley's Comet, May 1.

The first reflection nebula, proof of interstellar dust



photo © Robert Gendler 2004

"...the nebula is disintegrated matter similar to what we know in the solar system, in the rings of Saturn, comets, etc., and ... it shines by reflected star light."

Slipher, V.M., *Lowell Obs. Bull.* **2**, 26 (1912).

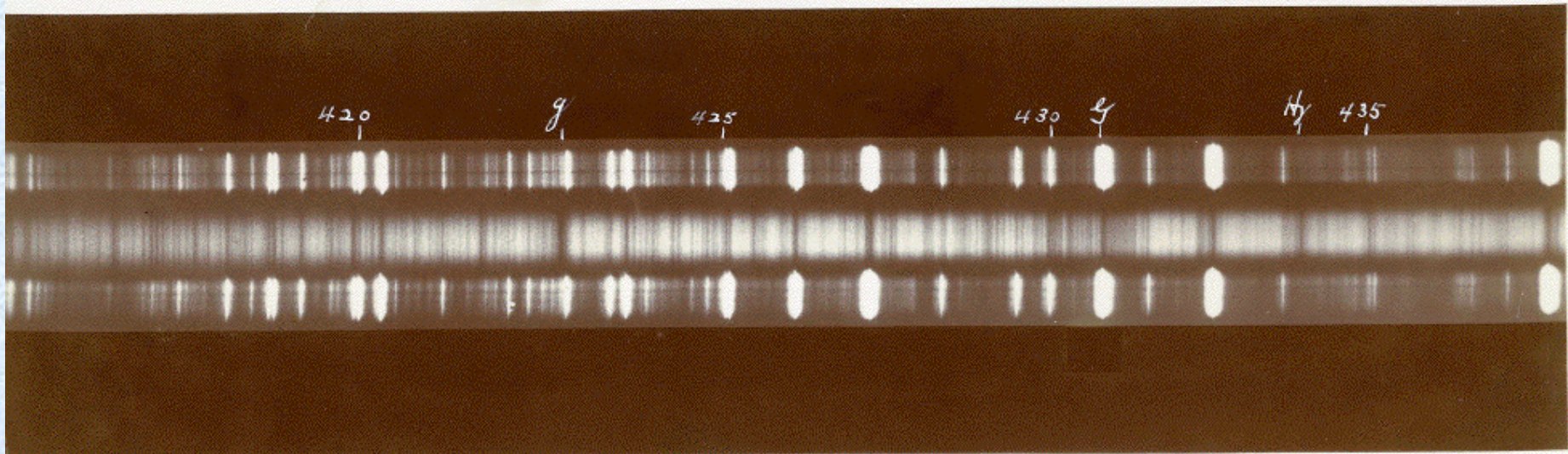
This observation of the nebula in the Pleiades has suggested to me that the Andromeda Nebula and similar spiral nebulae might consist of a central star enveloped and beclouded by fragmentary and disintegrated matter which shines by light supplied by the central sun. This conception is in keeping with spectrograms of the Andromeda Nebula made here and with Bohlin's value for its parallax.

V. M. SLIPHER.

LOWELL OBSERVATORY,
FLAGSTAFF, ARIZ.

December 20, 1912.

Spectrum of Mars

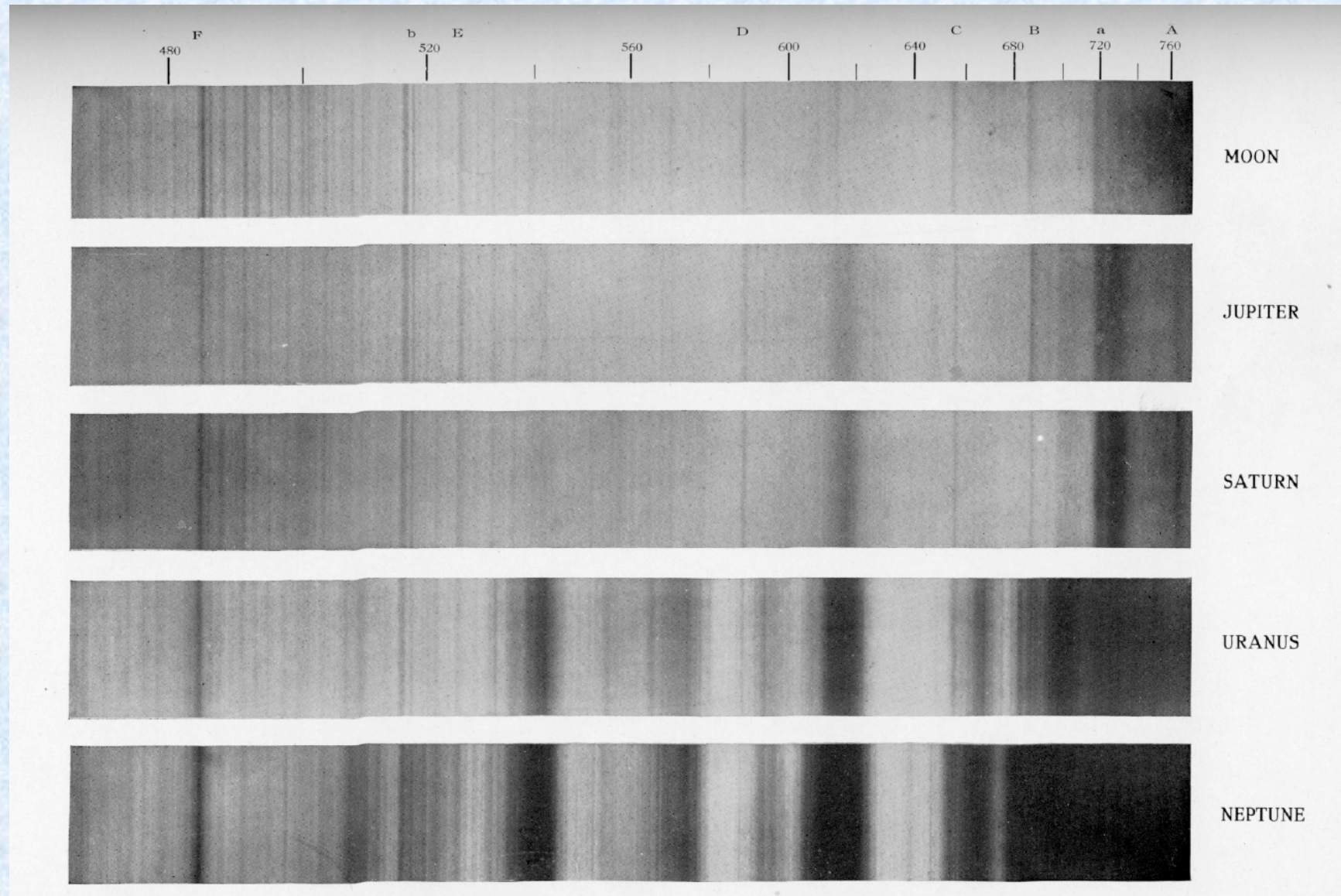


Photographed by V.M. Slipher 7 March 1903

15 minute exposure, iron comparison spectrum.

One of the plates used to determine planet's rotation in Slipher, V.M., *Lowell Obs. Bull.* **1**, 19 (1903).

Spectra of Major Planets



Slipher, V.M., *Lowell Obs. Bull.* 1, 231 (1909).

II. Lowell's Death Brings New Responsibilities and Cares, 1916–1926

Slipher served as acting director, 1916–26, while trustee fought Lowell's widow in court to get the estate for the Observatory. She received half the income until her death in 1954.

Slipher turned to business ventures to assure survival of his family.



Lowell wedding, 1908



Venus, the Observatory cow



House on Mars Hill



V.M. with wife, children, and
mother-in-law, 1911

PLATE I

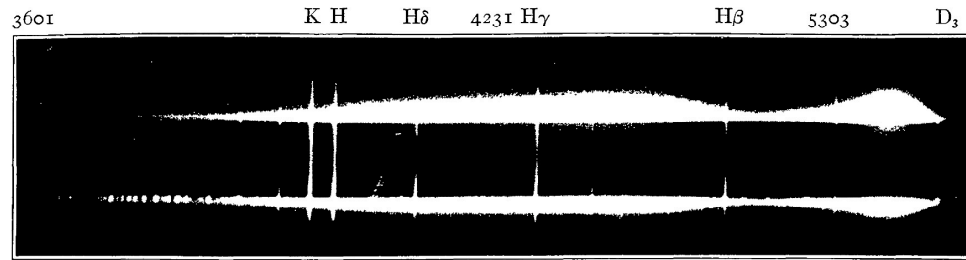


Fig. 1.—General spectrum of the corona. Single prism. Top W

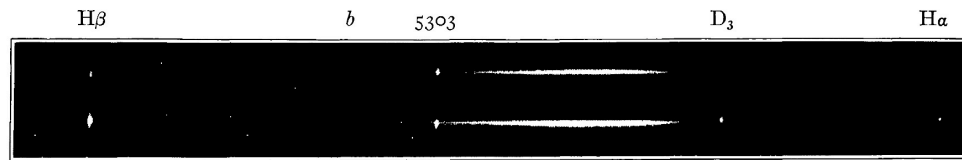


FIG. 2.—Spectrum of inner corona. Three prisms. Top E

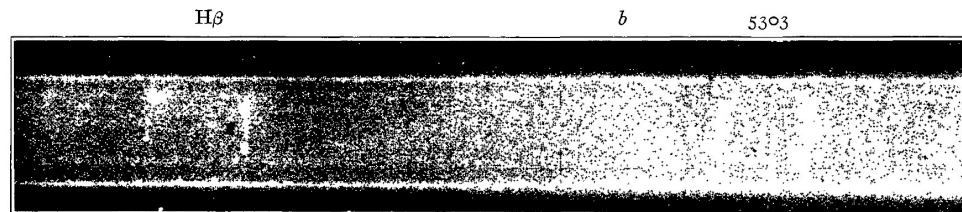


FIG. 3.—H β ring and green coronium ring. Top N

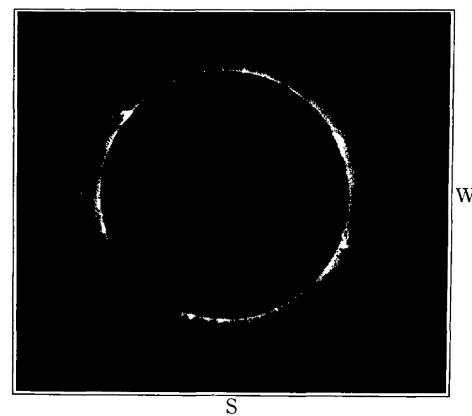


FIG. 4.—Prominences and inner corona with 39-foot camera.

ECLIPSE OF JUNE 8, 1918

1918 solar eclipse,
observed from near
Syracuse, Kansas by
Lowell Observatory
expedition

Slipher, V.M., *Ap.J.* **55**, 73 (1922).

III. The Last Productive Years, 1926–1933



Roger Lowell
Putnam
Sole Trustee,
1927–1967

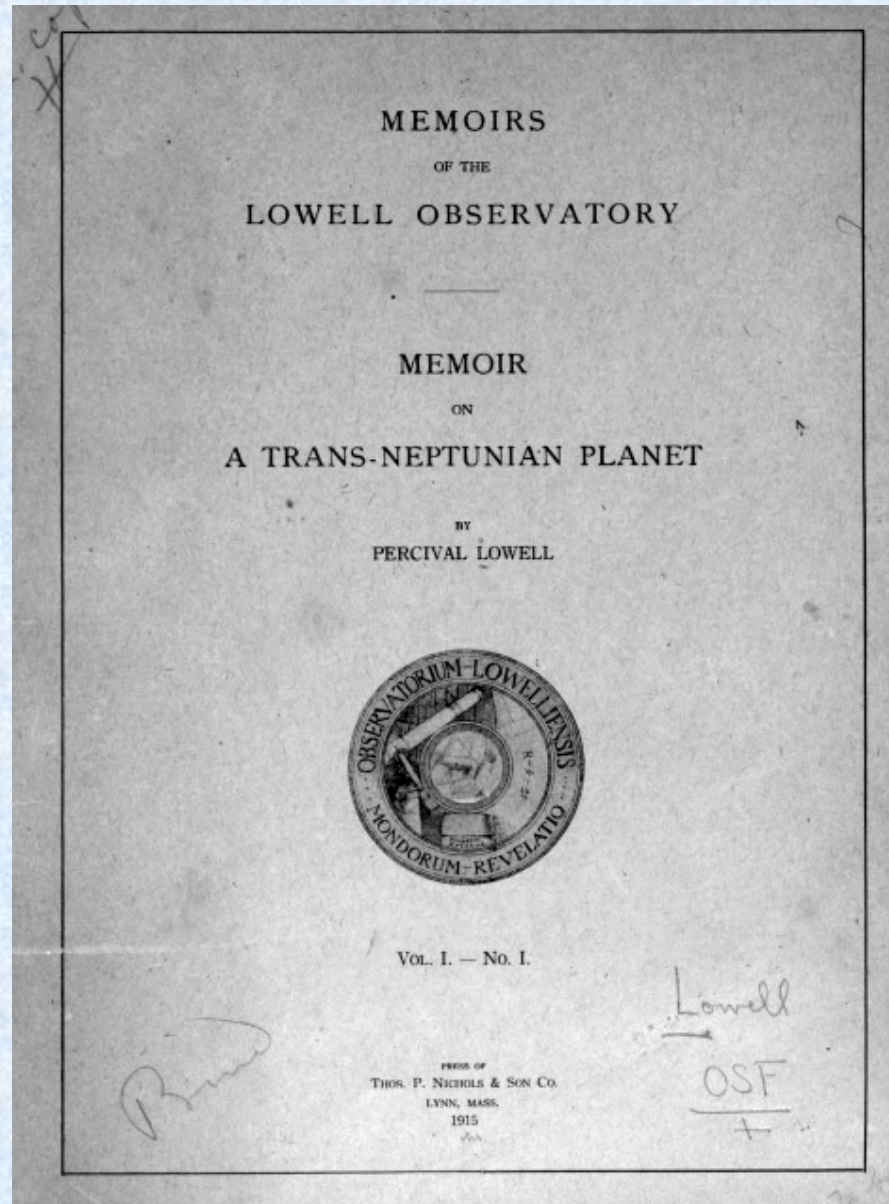
Appointed permanent director, 1926
after settlement of estate.

Depression, bank failure, more
business activities.



V.M., age 50, in 1925

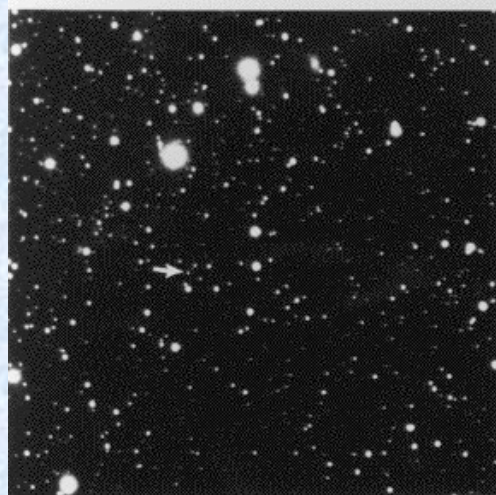
Lowell had predicted Planet X based on his computer orbit of Neptune



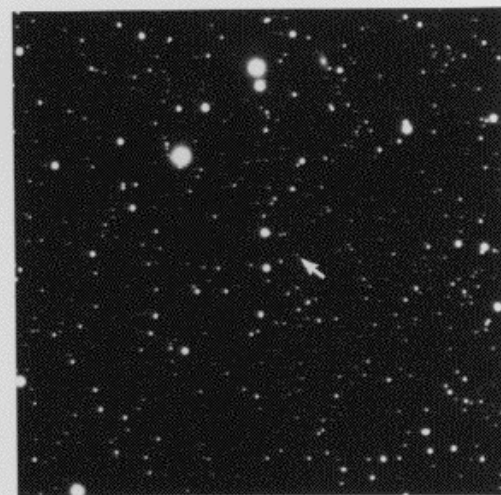
Elizabeth Williams



DISCOVERY OF THE PLANET PLUTO

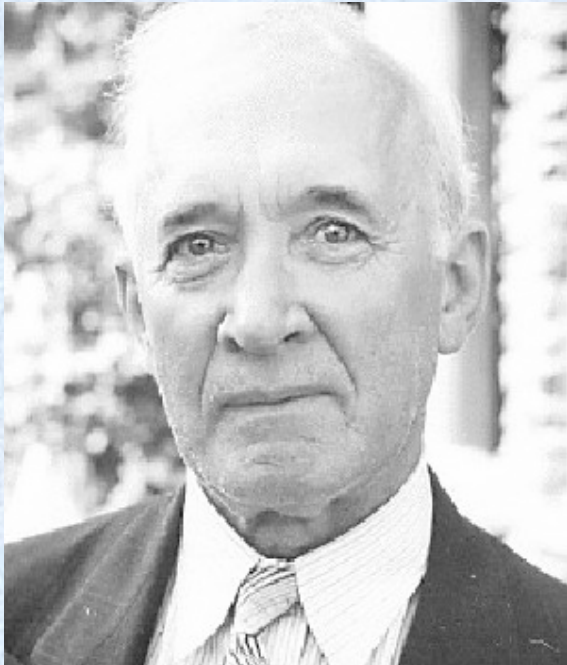


January 23, 1930



January 29, 1930

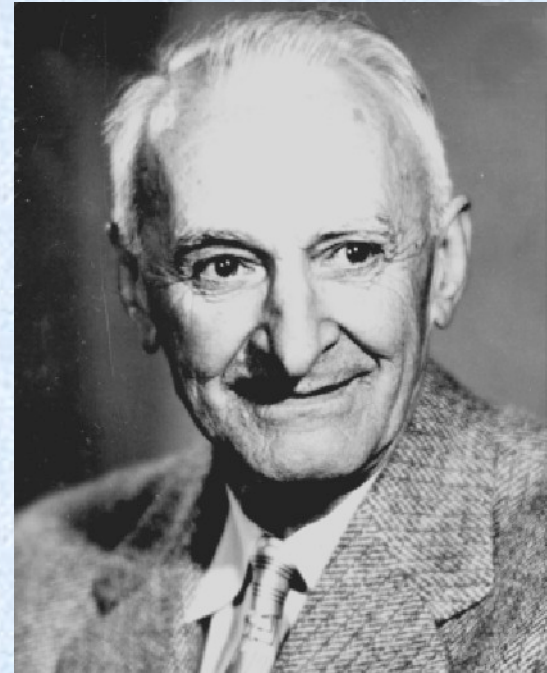
IV. The Doldrums, 1934–1954



V.M.



C.O.



E.C.

The three grew old together. V.M. tended to his business interests, E.C. was active in politics, and Lampland puttered.

Arthur Adel



Fronske Studios
courtesy AIP Emilio Segrè Visual Archives

V. Retirement, 1954–1969

Turning over the reins at last, to
Albert G. Wilson, on his 79th
birthday.



VI. Conclusion

Aside from his work on galaxies, Slipher spectroscopically discovered lines in the aurora and night sky,

confirmed the absence of chlorophyll in the martian atmosphere, found that Venus was a very slow rotator, confirmed the rotation period of Mars, refined the periods of Jupiter and Saturn, made the first determination of the rotation period of Uranus, found lines in planetary atmospheres, comets, and the Sun,

confirmed that the "stationary lines" of Ca are due to interstellar clouds,

discovered interstellar dust by showing that a nebula in the Pleiades shines by reflected starlight.

Why does V.M. Slipher get so little respect?

1. Lack of vision.

Slipher *needed* Lowell's direction. His only significant achievement in later years was to successfully resume the Lowell-initiated search for a ninth planet.

2. Negative reputation of Percival Lowell, and by extension, the Lowell Observatory.

Distrust by Campbell, Wright, Hale, and others made him extremely reticent about advancing his own work after Lowell was gone. He was slow to publish and hesitant to interact with most others.

3. Hubble's failure to properly credit him for his redshifts in the 1929 PNAS paper.

His obituary in *Physics Today* was underwhelming.

**Vesto M. Slipher, Directed
Lowell Observatory, Dies**

Vesto M. Slipher, director of the Lowell Observatory until 1952, died 8 Nov. at 93. Slipher had been at the observatory since 1901 and became director in 1926. He supervised work that led to the discovery in 1930 of Pluto. Among the honors received by Slipher were the Lalande Prize and gold medal of the Paris Academy of Sciences (1919), the Draper Medal of the National Academy of Sciences (1932) and the Royal Astronomical Society gold medal (1932).

Thank you

for documents and images:

Lauren Amundsen, Antoinette Beiser, Martin Hecht, LOA

for helpful discussions:

Art Adel (1994), Frank Edmondson (2005), Albert G. Wilson (2005–2012)