Occultations of Planets, observed at Washington in 1876 and 1877.

The Occultation of Saturn, 1876, August 6.

Immersion. — Ball of the planet, exterior contact,
10^h 33^m 15^s.6.

Ball of the planet, interior contact,
10^h 35^m 20^s.6,

Emersion. — The sharp point of the ring was the
part of the planet first seen — at
10^h 56^m 19^s.6.

It reappeared close to the very bright summit of
a lunar peak. This first view of the extremity of the
ring did not gradually increase. I was looking right
at the point of reappearance, and the first I saw was
this instantaneous, sharply-defined reappearance [at 19^s.6]
of what seemed to be a considerable part of the ring —
having an irregular shape, and about the apparent size
of a third - magnitude star. The light of this visible
part of the ring was, of course, much more dim than

that of such a star is. From 19^s.6 till about 28^s there
appeared to be no progress of the occultation.

The interior contact of the ball was observed at
10^h 57^m 31^s.6.

I noticed no hesitation nor distortion here; nor any
at the exterior contact of the ball, observed at
11^h 0^m 15^s.6.

I thought I saw some hesitation at the last contact
of the ring, at

11^h 1^m 19^s.1.

All these emersion contacts were at the dark limb
of the moon. During the progress of the moon's limb
over the ball of the planet, the edge of the former
was very sharply defined. There seemed to be a size-
able lunar eminence projected on the disk of Saturn,
and which made a nearly central track over it, in the
line of the planet's equator.

The Occultation of Saturn, 1876, September 2.

Immersion. — First flattening of ball, 14^h 38^m 29^s.4

Ball gone, 14. 39. 8.9

Final disappearance of extremity of ring 14. 39. 36.9

Seeing poor — images tremulous.

Emersion. — Exterior contact of ball, 15^h 40^m 7^s.4

Seeing very poor.

The Occultation of Uranus, 1877, April 21.

The moon being considerably past first quarter,
I could not definitely see the outline of the dark limb
as it came to geometric contact with the disk of Uranus.
The first phase, therefore, that I could notice was the
first diminution of the light of the planet — which
was at

12^h 30^m 59^s.0.

This was undoubtedly a second or two after geo-
metric exterior contact.

Final disappearance of the second limb at

12^h 31^m 2^s.3.

There was nothing that I could pronounce to be
decided retardation or hesitation in the disappearance.

All the occultations were observed at the residence
of Professor Newcomb — which it

5^s.8 east

and 47[°]7 north

of the United States Naval Observatory. The record,
however, is in Washington mean time — that of the
meridian of the Naval Observatory. The instrument
used is an equatorial refractor, of 3.25 inches aperture,
with a power of 175.

Professor Newcomb observed the exterior contact
at the immersion of Saturn on August the sixth: the
remainder of the observations were made by myself.

D. P. Todd.

The Observatory,

Washington, 6. July, 1877.

Inhalt:

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