

Rare Astronomical Occurrence: Rosh Chodesh Iyar 5768 – Rabban Gamliel’s Moon by Ben-Tzion Spitz

This Sunday morning and Monday evening (May 4 & 5, 2008), 29 & 30 of Nissan 5768 will see the arrival of a rare astronomical occurrence – “Opposing Crescent” Moons.

Sky & Telescope Magazine reported on May 2nd:

“Robert C. Victor points out that *this* new Moon offers something quite special. Because the Moon is passing north of the Sun and is also at perigee, hence moving most rapidly along its orbit, there's a chance for North Americans to spot an ultrathin crescent Moon on Sunday morning in the east, and then again on Monday evening in the west — on consecutive days. Only a tiny handful of skilled observers have ever managed to see such "opposing crescents" before.”

The Mishnah in Tractate Rosh Hashana (Ch. 2, Mishna 8) states:

“There was a case of two witnesses that came and said: “We saw [the moon] in the East in the morning and in the West in the evening”. Rabbi Yochanan ben Nuri said: “They are false witnesses!” When [the witnesses] arrived in Yavne, Rabban Gamliel accepted [their testimony].”

The Mishna gives a couple of other cases of abnormal lunar reports which Rabban Gamliel accepts, and proclaims the new month as a result. Other sages disagree with him. This leads to fairly heated and acrimonious debate (see Ch. 2 Mishna 9) which in turn leads to an embarrassing episode for one of Rabban Gamliel’s opponents, Rabbi Yehoshua. That case is later on attributed as one of the causes for the eventual semi-deposition of Rabban Gamliel from his leadership position.

Rabbi Yehoshua was an accomplished astronomer in his own right, and according to some modern commentators was familiar with what in modern times we call Halley’s Comet. With an average period of 76 years, this could only have been known through transmission and not observation. There is a fascinating story in the Talmud (Babylonian Talmud, Horayoth, 10a) featuring Rabban Gamliel and Rabbi Yehoshua that is the source of the Halley’s Comet hypothesis:

"Rabban Gamliel and Rabbi Yehoshua went together on a voyage at sea. Rabban Gamliel carried a supply of bread. Rabbi Yehoshua carried a similar amount of bread and in addition a reserve of flour. At sea, they used up the entire supply of bread and had to utilize Rabbi Yehoshua's flour reserve. Rabban Gamliel then asked Rabbi Yehoshua - "Did you know that this trip would last longer than usual, when you decided to carry this flour reserve?" Rabbi Yehoshua answered - "There is a star that appears every 70 years and induces navigational errors. I thought it might appear and cause us to go astray."

Nonetheless, Rabban Gamliel appears to have been an expert astronomer who was a descendent of a long line of astronomers. His family, the descendents of Hillel, who for generations were the leaders of the children of Israel, had been responsible for determining the start of the new months and the intercalation of leap years. This was a responsibility of significant importance in determining the dates of the religious festivals throughout the year. The determination of the new moon was so important, that even attendants to new moon witnesses were not only permitted, but were commanded to desecrate the Sabbath in order to deliver the testimony. This desecration was permitted even when there was a high likelihood that many others had already presented the required testimony.

To demonstrate how important this testimony is, the Mishna (Ch. 1, Mishna 6) records how Rabban Gamliel chastised Rabbi Akiva for stopping new moon witnesses on a Sabbath after forty pairs of witnesses had already passed. Rabban Gamliel explained:

“If you cause the people to tarry, you will discourage them from future [testimonies].”

Besides apparently having a rich history and record of astronomical phenomena, Rabban Gamliel also possessed actual depictions of different phases and positions of the moon in order to better ascertain what new moon witnesses actually saw. He must have also had his own tradition of rare astronomical phenomena in order to confidently determine that what witnesses reported was not a false testimony, but merely unusual and highly infrequent behavior on the part of our celestial stewards.

The “Opposing Crescent” moons of this Rosh Chodesh is an example of this unique lunar phenomena, that ostensibly Rabban Gamliel would have recognized for what it is and would not have attributed testimony of it to false reports.

And now, you can see it for yourself -- see pictures below to see what it should look like. Chodesh Tov.



In Pearce, Arizona, Matt BenDaniel recorded the Moon at dawn on October 15, 2001, only 30.8 hours before new.



On October 26, 2003, after taking his camera to Pescadero State Beach in California, Youssef M. Ismail caught this 37-hour-old Moon with the planet Venus $3\frac{1}{2}^\circ$ to its right. The Moon had been sighted a half day earlier in the Middle East, an event that marked the beginning of Ramadan, the Islamic month of fasting.