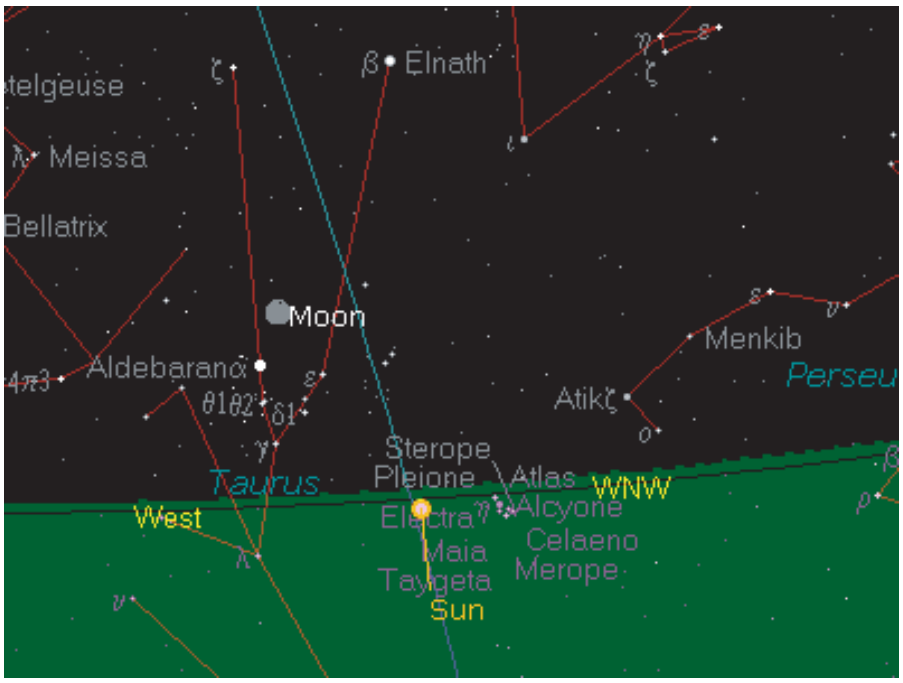
REPORT 01 DIARY NO. -567

Nebuchadnessar Year 37 **Month** I **Day** 1 **Julian Year** -567 (568 BCE) Apr 22	**Time:** Sunset **View:** West

Diary Line 1: *Year 37 of Nebukadnezar, king of Babylon. Month I (the 1st of which was identical with) the 30th (of the preceding month), the moon became visible behind the Bull of Heaven;*



Sunset Apr 22, -567: The moon behind the Bull of Heaven

Comments: The Babylonian month begins with the first visibility of the moon after New Moon. On Day 1 of a month, the lunar crescent appears low in the western sky at sunset, as seen in the Skyshot.

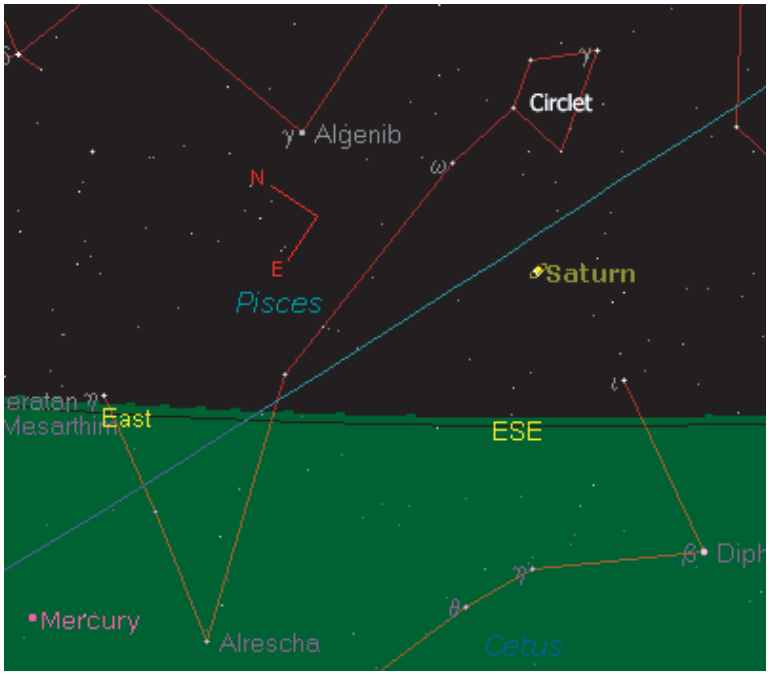
(The horizon is the boundary between the black "sky" and the green "earth." Because of atmospheric effects, celestial bodies do not set until they are appreciably below the horizon. The thin black line near the top of the green area represents the effective horizon. The horizon is depicted with a slight unrealistic curvature.)

The Diary records the moon is behind the Bull of Heaven, which signifies the moon will set later than the Bull of Heaven. The part of constellation Taurus that the Babylonians called the Bull of Heaven includes the normal star Aldebaran and other stars that have set or will set before the moon. Hence TheSky computations are consistent with the Diary text.

REPORT 02 DIARY NO. -567

Nebuchadnessar Year 37 **Month** I **Day** 1 **Julian Year** -567 (568 BCE) Apr 22	**Time:** 2:00 am **View:** East

Diary Line 2: *Saturn was in front of the Swallow*



2 am Apr 22, -567: Saturn in front of the Swallow

Comments: A sky watcher looking east in the middle of the night on April 22, -567 would see the "Circlet" of Pisces rise above the horizon. After Saturn came into view, the eastern section of the constellation would follow. (Note N-E orientation axes in red and the blue line that represents the ecliptic.)

The identity of the Swallow is unresolved, though it is understood to be associated with Pisces. The Skyshot shows Saturn in front of omega pisces and the trailing end of Pisces. Thus, Saturn is likely in front of the ill-defined Swallow, and TheSky computations are consistent with the Diary text.

REPORT 03 DIARY NO. -567

Nebuchadnessar Year 37 **Month** I **Day** 8 **Julian Year** -567 (568 BC) Apr 29	**Time:** Sunset 6:34 pm **View:** The Moon

Diary Line 3: *Night of the 9th (error for 8th), beginning of the night, the moon stood 1 cubit in front of ß Virginis.*

Sunset Apr 29, -567: the moon stood 2º (1 cubit) in front of Zavijava

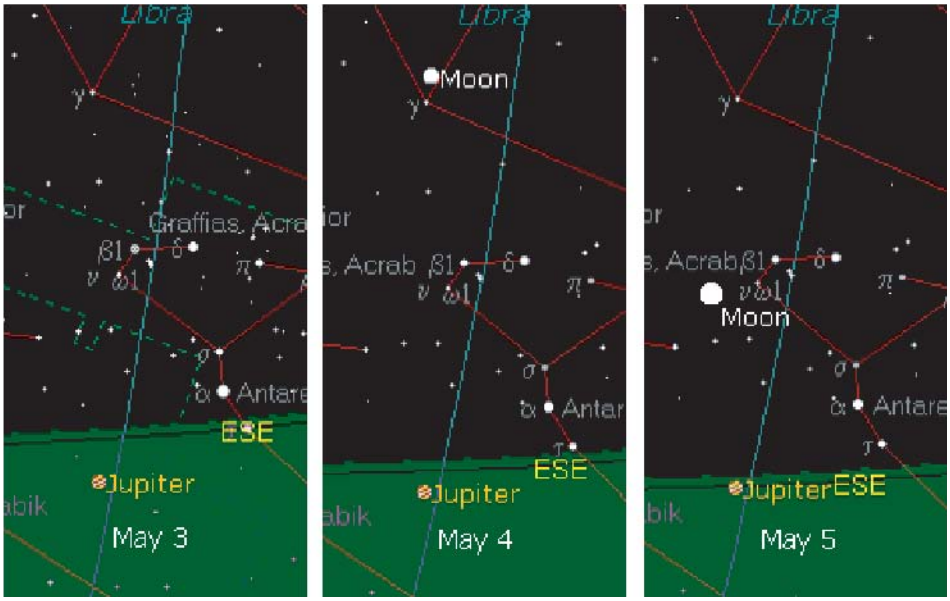
Comments: The red stick figure in the Skyshot is the constellation Leo the lion. ß Virginis is the star Zavijava near the ecliptic.

The moon moves night after night east to west along the ecliptic (blue line). It passes near Zavijava on April 29 (Day 8 - not on Day 9 as the Babylonian scribe erroneously recorded). It is in front (to the west) of the star, as recorded in the Diary. TheSky computes that the moon is 2º40' west of Zavijava (the distance from the moon to the center of the red target in the Skyshot.) The Diary records a distance of 2º (1 cubit). Setting aside the scribal error, the mismatch is 0º 40' - about 3 minutes.

REPORT 04 DIARY NO. -567

Nebuchadnessar Year 37 **Month** I **Day** 12 **Julian Year** -567 (568 BCE) May 3	**Time:** Sunset 6:36 pm **View:** East

Diary Line 4: *or 12th, Jupiter's acronychal rising.*



Sunrise May 3 to May5, -567: Jupiter's acronychal rising

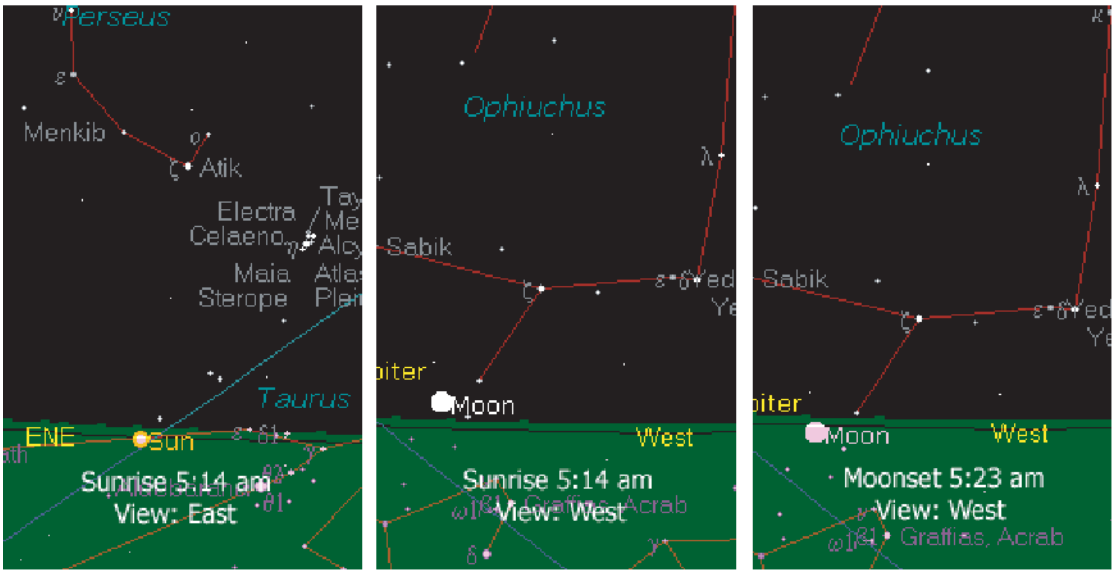
Comments: Acronychal is the astronomer's term for "occurring at sunset." The Skyshots above picture the darkened sky in the east. In the west, the sky is still brightened by the setting sun.

On May 3rd and May 4th, Jupiter is below the horizon. According to TheSky, only on May 5th does it rise to the thin black line that represents the effective horizon. The Diary records the acronychal rising of Jupiter on May 3rd, 2 days before the computed date. TheSky computes Jupiter is 10 minutes below the horizon on May 3rd. The 10 minute difference serves as a measure of the mismatch between modern computation and the historic record.

REPORT 05 DIARY NO. -567

Nebuchadnessar Year 37 **Month** I **Day** 14 **Julian Year** -567 (568 BCE) May 5/6	**Time:** Sunrise 5:14 am Moonset 5:23 am **Views:** West & East

Diary Line 4: *On the 14th, one god was seen with the other, sunrise to moonset: 4º.*



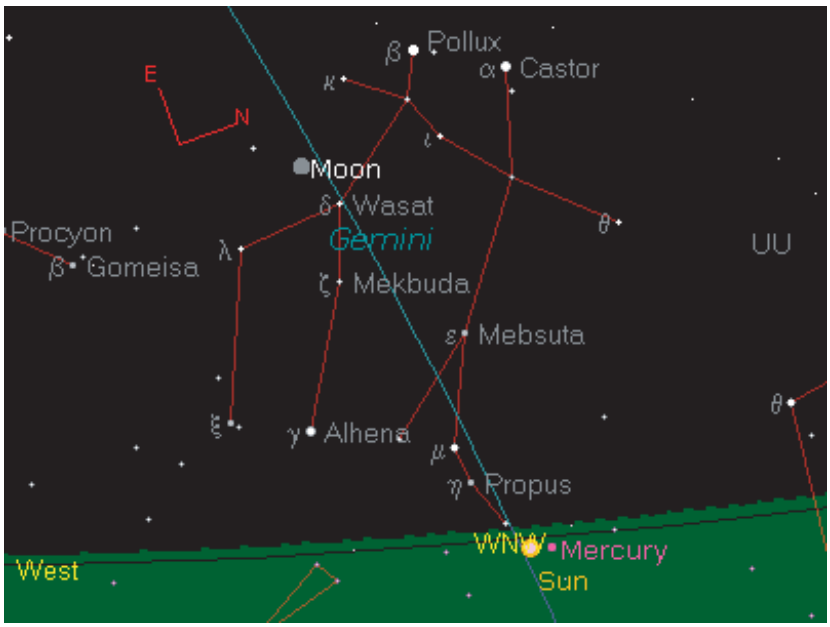
Comments: The Babylonian "day" starts at sunset. Hence, Day 14 that began at sunset on May 5th segued at midnight to May 6th. Sunrise the following morning occurred on May 6th.

TheSky computes sunrise at 5:14 am on May 6th. For a while, both gods - the sun and the moon - were visible concurrently. The moon then set 9 minutes later at 5:23 am. The Diary records the moon set 16 minutes (4º) after sunrise. The mismatch is 7 minutes.

REPORT 06 DIARY NO. -567

Nebuchadnessar Year 37 **Month** II **Day** 1 **Julian Year** -567 (568 BCE) May 22	**Time:** Sunset 6:49 pm **View:** West

Diary Line 8: *Month II (the 1st of which was identical with) the 30th (of the preceding month), the moon became visible, while the sun stood there, 4 cubits below ß Geminorum; it was thick; there was earthshine […]*



Sunset May 22, -567: the moon was 8º (4 cubits) below Pollux

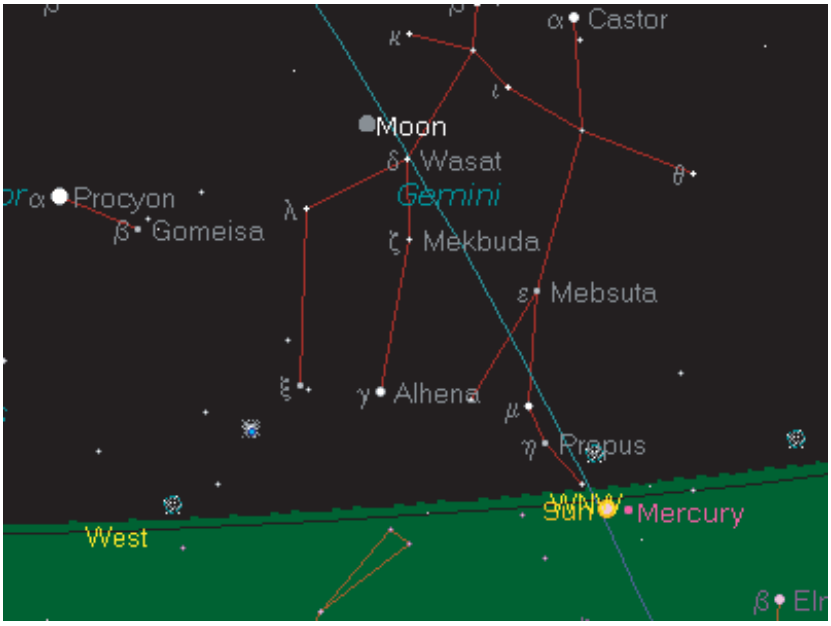
Comments: : On Day 1 of a Babylonian month, the first appearance of the moon after New Moon occurs around sunset when a thin lunar crescent is visible low in the western sky. On May 22, the moon was high enough in the sky to be seen well before sunset - *while the sun stood there*. It was thick, which signifies the crescent was more substantial than a sliver. The reference to "earthshine" testifies to the acuity of Babylonian sky-watchers - they could make out the dark section of the moon faintly illuminated by sunlight reflected from the earth.

The moon was visible south of (below) Pollux (ß Geminorum) in the constellation Gemini. TheSky computes the moon was 7º30' south of Pollux. The Diary records an 8º (4 cubits) distance, a difference of 30' from the computed value. The mismatch amounts to 2 minutes.

REPORT 07 DIARY NO. -567

Nebuchadnessar Year 37 **Month** II **Day** 1 **Julian Year** -567 (568 BCE) May 22	**Time:** Sunset 6:49 pm **View:** West

Diary Line 9: *Saturn was in front of the Swallow, Mercury which had set, was not visible.*



Sunset May 22, -567:
Mercury was not visible

Comments: The Skyshot shows Mercury very close to the sun (on the horizon.) As the Diary records, it was not visible to sky watchers. (See Report 09 for the rising of Mercury several days later.)

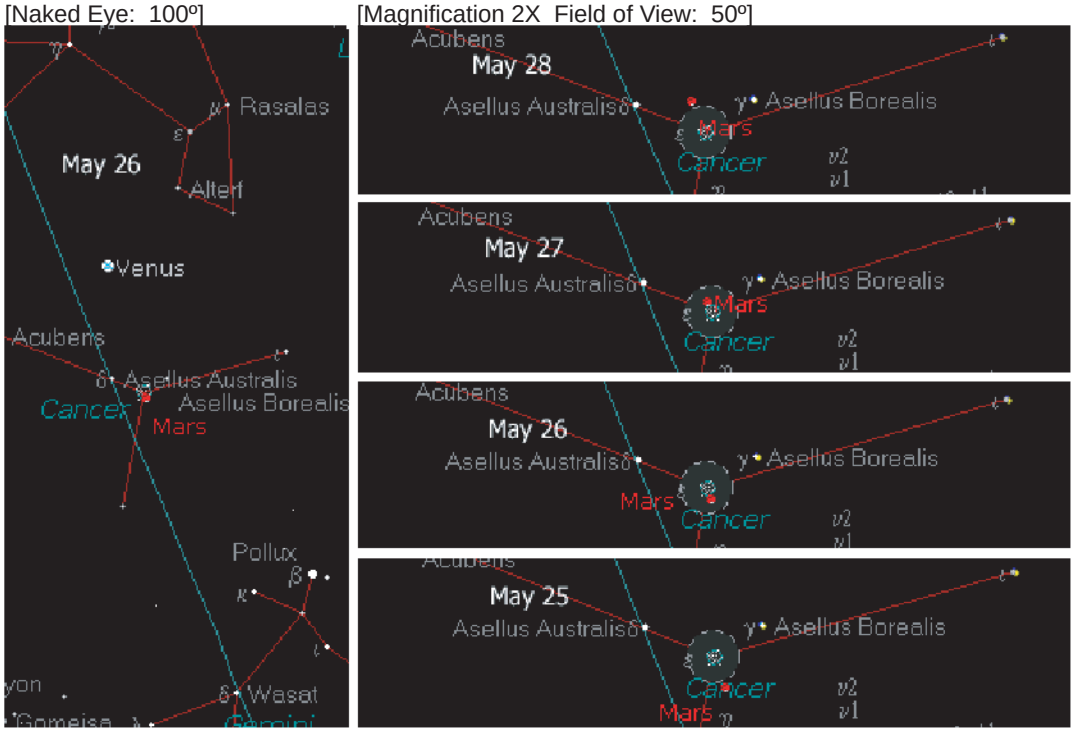
Saturn, the Diary records, was in front of the Swallow. The planet moves slowly relative to the fixed stars, and it's position in front of the Swallow has not changed appreciably in the past month. (See Report 02)

REPORT 08 DIARY NO. -567

Nebuchadnessar Year 37 **Month** II **Day** 3 **Julian Year** -567 (568 BCE) May 24	**Time:** Sunset 6:50 pm **View:** High in the sky

Diary Line 10: *the 3rd, Mars entered Praesepe. The 5th, it went out of it.*

[Naked Eye: 100º] [Magnification 2X Field of View: 50º]



Comments: The left panel (naked eye field of view) shows Mars between the stars Asellus Australis and Asellus Borealis. Behind Mars, obscured by the red dot, is the Beehive Cluster known as Praesepe to the ancients.

The four magnified Skyshots show Mars about to enter the Beehive Cluster on the 25th (bottom panel), remaining in the Cluster on the 26th and 27th, and on the 28th Mars passed out of Praesepe. As recorded in the Diaries, Mars remained within the Cluster exactly two days.

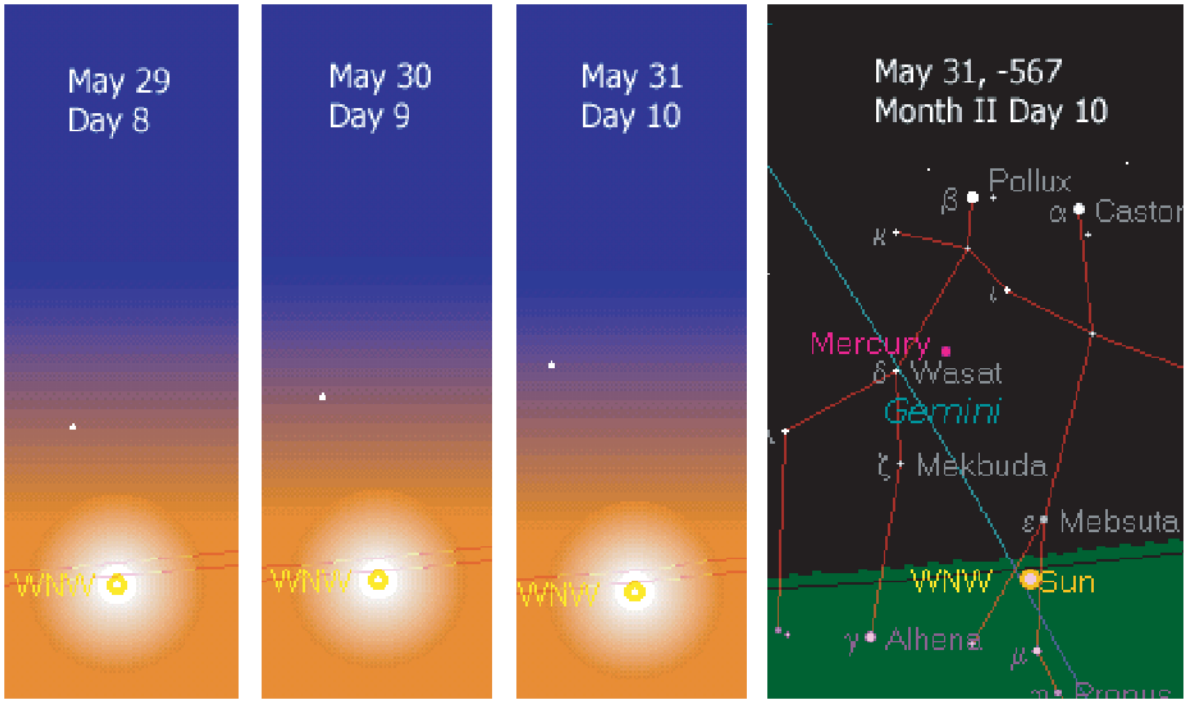
The computed dates do not match those of the Diary. Day 3 corresponds to May 24th, but according to TheSky, Mars did not enter the Beehive Cluster until May 26th two days later.

The mismatch of two days may seem significant, but the astronomical discrepancy is minor. Mars, as it moves through the Cluster, covers about ½º a day. Thus, a discrepancyof 2 days entails an error of 1º (4 minutes.)

REPORT 09 DIARY NO. -567

Nebuchadnessar Year 37 **Month** II **Day** 10 **Julian Year** -567 (568 BCE) May 31	**Time:** Sunset 6:55 pm **View:** West

Diary Line 10: *The 10th, Mercury [rose] in the west behind the […]*

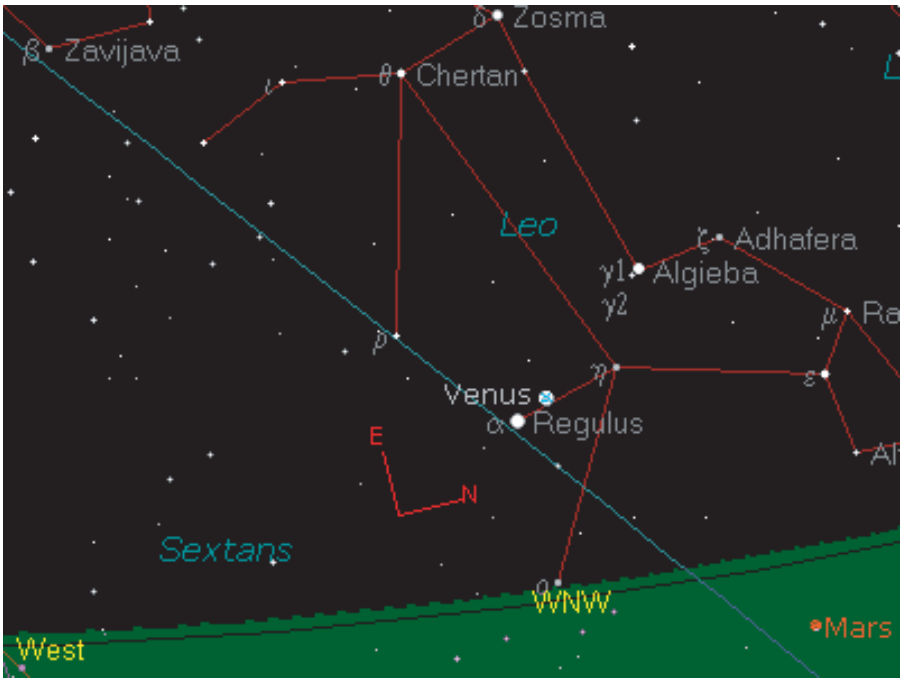


Comments: The little white dot above the "sun" in the three bright panels represents Mercury. In the first panel, May 29th, Mercury lies within the bright aura of the setting sun. It was not visible to Babylonian sky-watchers. By May 31st (third panel), TheSky indicates Mercury was high enough in the sky to be visible. Thus modern computation matches the Diary record - Mercury rose in the west on Day 10 (May 31st).

REPORT 10 DIARY NO. -567

Nebuchadnessar Year 37 **Month** II **Day** 18 **Julian Year** -567 (568 BCE) June 8	**Time:** Sunset 6:55 pm **View:** West

Diary Line 11: *The 18th, Venus was balanced 1 cubit 4 fingers below alpha Leonis.*



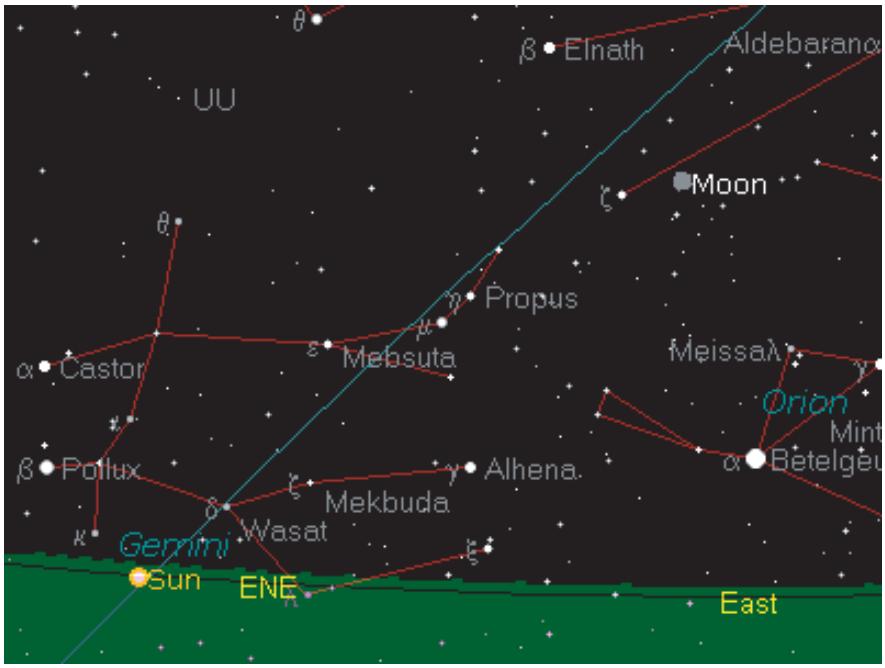
Sunset June 8, -567:
Venus
was balanced 2º 20' below
Regulus

Comments: Venus is close to the normal star Regulus situated on the ecliptic (the blue line). TheSky computes Venus 1º 30' above (north of) Regulus. The Diary records Venus 2º 20' (1 cubit 4 fingers) below the star, rather than above. The mismatch between TheSky and the Diary record is 3º 50', about 15 minutes. Perhaps the error is due to confusion between "above" and "below," or more likely, the Babylonian observers failed to distinguish Venus from the bright star Regulus and "flipped" them.

REPORT 11 DIARY NO. -567

Nebuchadnessar Year 37 **Month** II **Day** 26 **Julian Year** -567 (568 BCE) Jun 16/17	**Time:** Sunrise 4:48 am **View:** East

Diary Line 11: *The 26th, (moonrise to sunrise) 23º; I did not observe the moon.*



Sunrise June 17, -567: moonrise to sunrise 23º

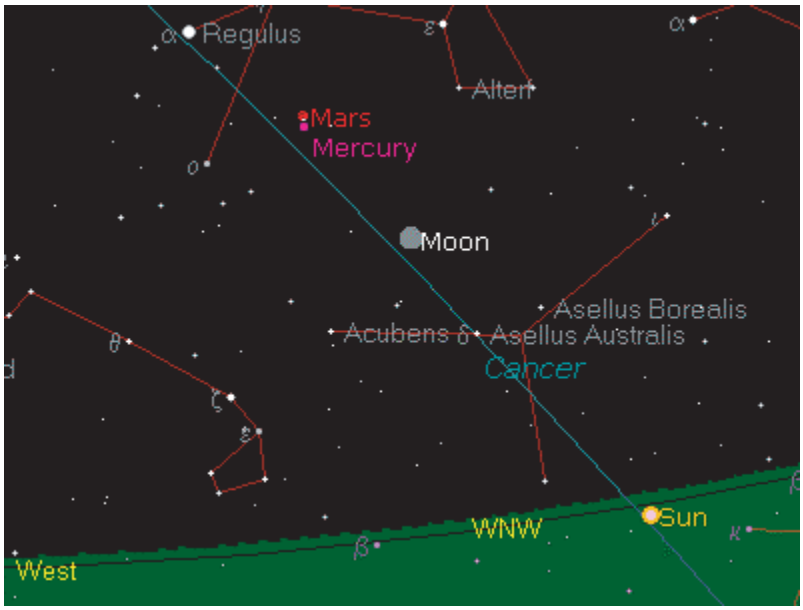
Comments: Day 26 of month began the evening of June 16th. Sunrise occurred the next morning, June 17th. TheSky computes the moon would rise 99 minutes before the sun on the 17th.

The Diary records that the astronomers of Babylon did not observe moonrise. They calculated the time from moonrise to sunrise was 92 minutes (4x23º). Their result differs from modern computation by 7 minutes.

REPORT 12 DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 1 **Julian Year** -567 (568 BCE) Jun 20	**Time:** Sunset 6:31 pm **View:** East, High in Sky

Diary Line 12: *the moon became visible behind Cancer; it was thick; sunset to moonset: 20º*



Sunset Jun 20, -567: the moon in Cancer; sunset to moonset: *20º*

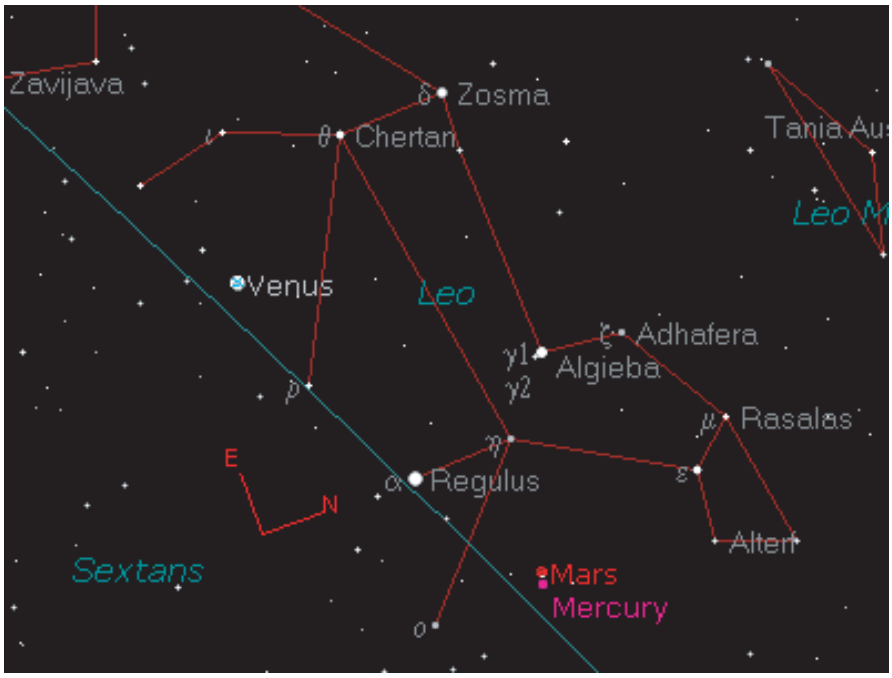
Comments: On the first day of Month III, the lunar crescent appeared behind Cancer. The Skyshot shows Cancer lower in the sky and hence the the constellation will set before the moon, i.e., the moon is behind Cancer.

TheSky calculates the moon will set at 8:26 am, 81 minutes after sunset. The Diary records sunset to moonset is 80 minutes (20º). The difference is 1 minute.

REPORT 13 DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 1 **Julian Year** -567 (568 BCE) Jun 20	**Time:** Sunset **View:** West

Diary Line 12 & 13: *At that time, Mars and Mercury were 4 cubits in front of alpha [Leonis]…Venus was in the west opposite theta Leonis.*



Sunset June 20, -567: Mars and Mercury 8º in front of Regulus… and Venus opposite Chertan

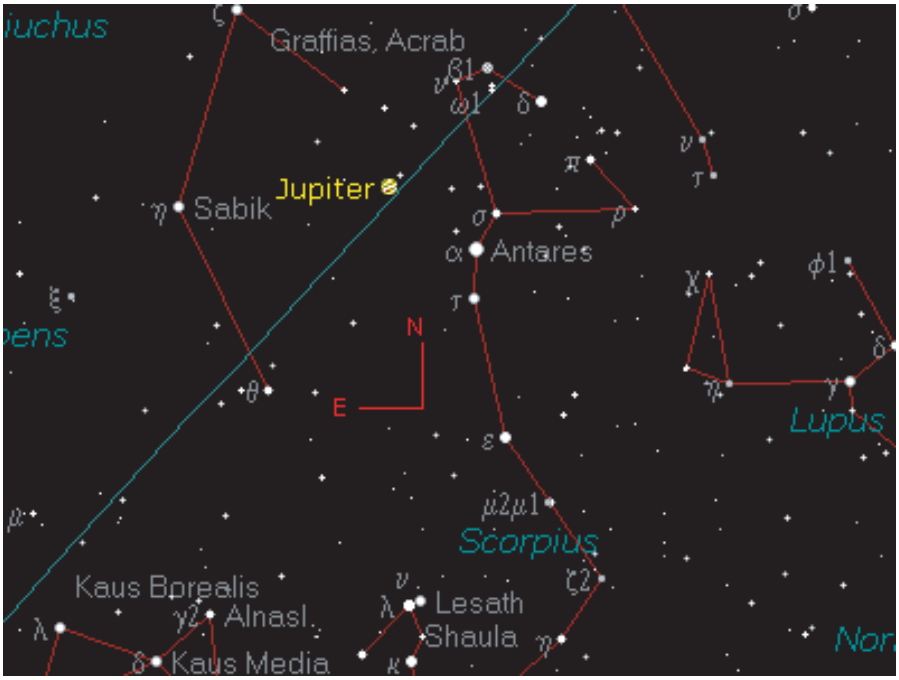
Comments: TheSky computes that Mars and Mercury are 7º 48' in front of Regulus (alpha Leonis) - slightly less than the 4 cubits (8º) recorded in the Diary. ("In front of" signifies the planets are further west than Regulus and hence they will set before the star.)

TheSky pictures Venus below (south of) the star Chertan (theta Leonis). The vague term "opposite" recorded in the Diary suggests the observer did not log the exact position of Venus. Still, TheSky computations are consistent with the Diary text.

REPORT 14 DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 1 **Julian Year** -567 (568 BCE) June 20	**Time:** Sunset 7:07 pm **View:** South Southeast

Diary Line 13: *Jupiter was above alpha Scorpii;*



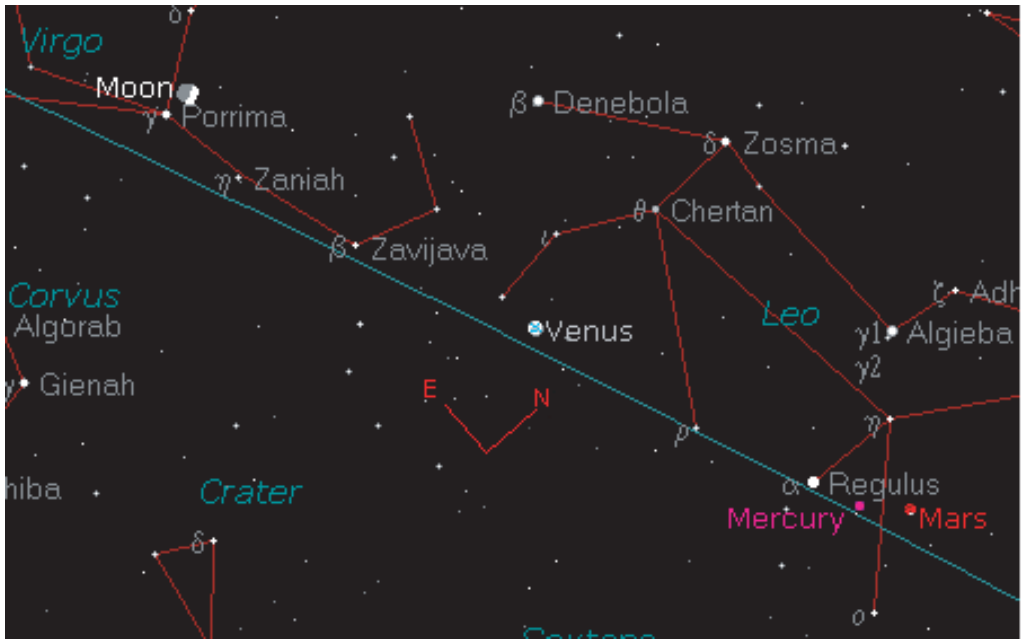
Sunset June 20, -567: Jupiter above Antares

Comments: At sunset on June 20th, looking to the south southeast, TheSky shows Jupiter visible high in the sky . It was in the constellation Scorpius, to the north of (above) the normal star a Scorpii (Antares), as the Diary reports.

REPORT 14* DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 5 **Julian Year** -567 (568 BCE) Jun 24	**Time:** Sunset 7:07 pm **View:** West, High in Sky

Diary Line 14: *Night of the 5th, beginning of the night, the moon passed towards the east 1 cubit <above/below> the bright star of the end of the Lion's foot.*



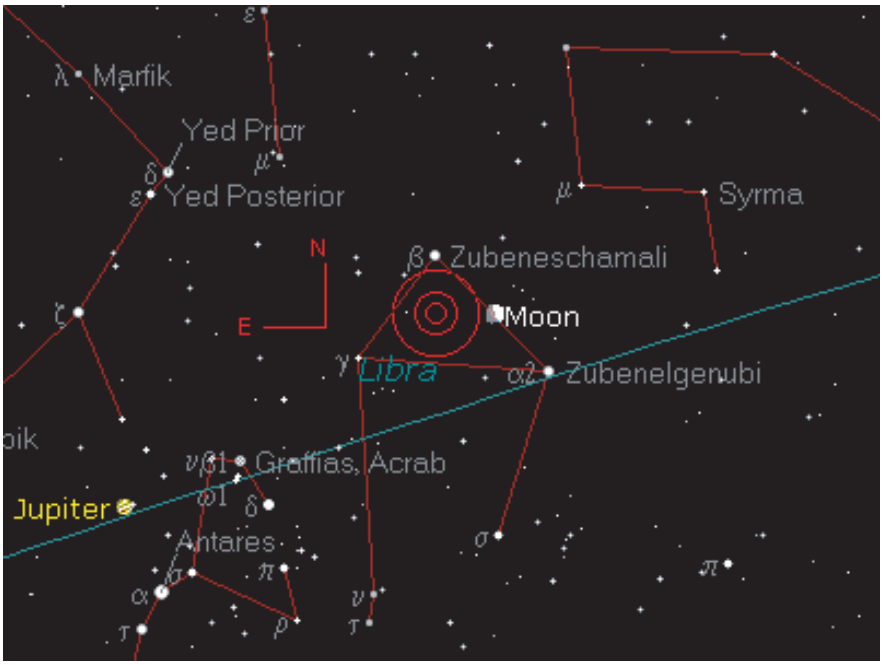
Sunset June 24, -567: the moon passed the bright star at the end of the Lion's foot.

Comments: At sunset on June 24th, TheSky computes the moon high in the western sky. It is nowhere near a "bright star at the end of the Lion's foot." Four stars mark the Lion's paws, but only alpha Leonis (Regulus) is bright. The faint star rho Leonis, 4 cubits behind Regulus, is a normal star, as is the star Chertan, the Rump of the Lion. The identity of the star in question is irrelevant, since the moon is not in the constellation Leo. It is in Virgo and passed through Leo a couple of days earlier. Clearly, the computed position of the moon does not match the Diary record.

REPORT 15 DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 8 **Julian Year** -567 (568 BCE) Jun 27	**Time:** Sunset 7:08 pm **View:** High in the sky

Diary Line 15: *Night of the 8th, first part of the night, the moon stood 2½ cubits below ß Librae.*



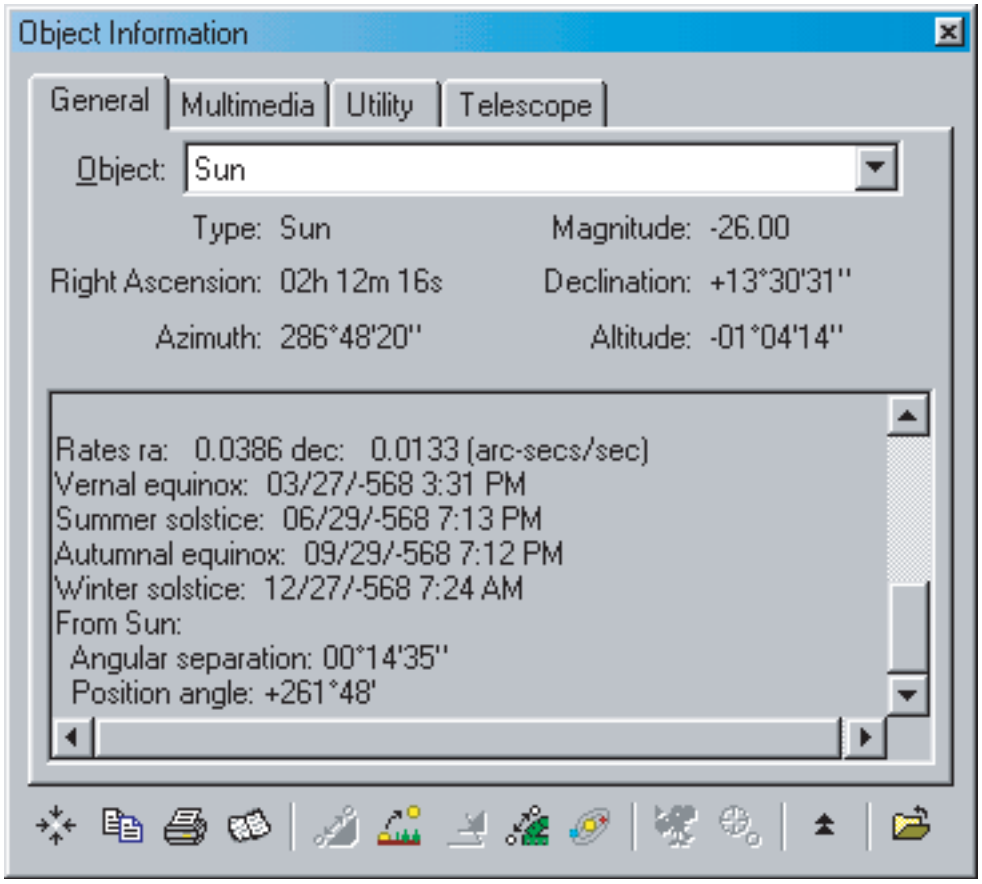
Sunset June 27, -567: the moon stood 5º (2½ cubits) below Zubeneschamali

Comments: On June 27th the moon is below (south of) the normal star Zubeneschamali (ß Librae) in the constellation Libra. TheSky determines the moon is 3º 15' below the star. (The red "bull's eye" marks the moon's position south of the star.) The Diary records a distance of 5º (2 ½ cubits), which differs by 1º 45' (7 minutes) from the computed value. (If Babylonian sky-watchers measured "below" with reference to the ecliptic, then the match in this case would be somewhat better.)

REPORT 16 DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 9 **Julian Year** -567 (568 BCE) June 28	**Time:** Daytime **View:**

Diary Line 16: *The 9th, solstice.*



Comments: June is the time of the summer solstice. It is commonly called the longest day of the year. It's the day the sun rises the highest in the sky, and consequently a person's shadow is shortest. In astronomy terms, solstice is the day - or time of day - the sun attains the greatest declination.

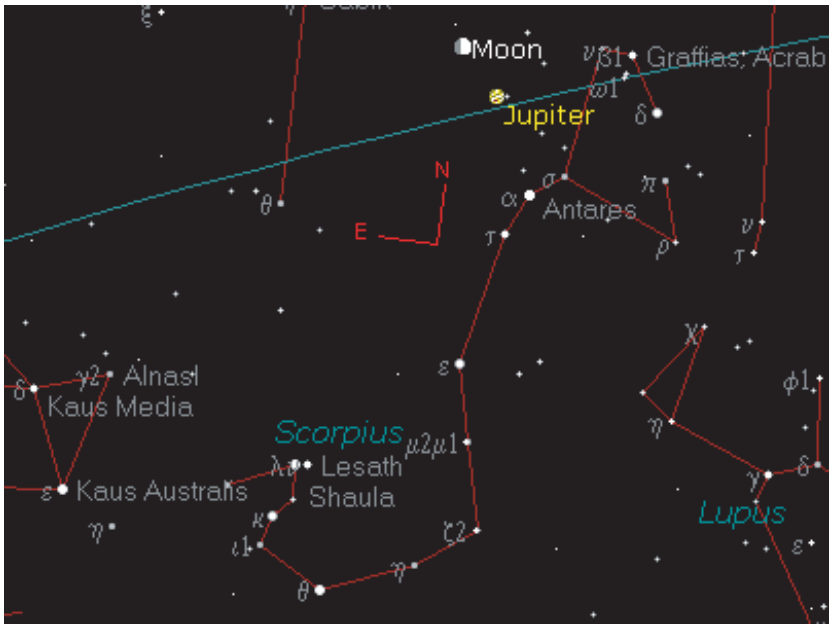
TheSky computes the solstice occurred at 7:13 pm on June 29th. The sun had set 5 minutes earlier at 7:08 pm, and hence, in the Babylonian way of reckoning days, the solstice happened on the next day, June 29/30.

The Diary dates the solstice one day earlier, on June 28/29. (See Summer Solstice in panel) Thus, the disparity between TheSky and the Diary can be stated as 1 day, or 5 minutes.

REPORT 16* DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 10 **Julian Year** -567 (568 BCE) Jun 29	**Time:** Sunset 7:08 pm **View:** West

Diary Line 16: *Night of the 10th, first part of the night, the moon was balanced 3½ cubits above a Scorpii.*



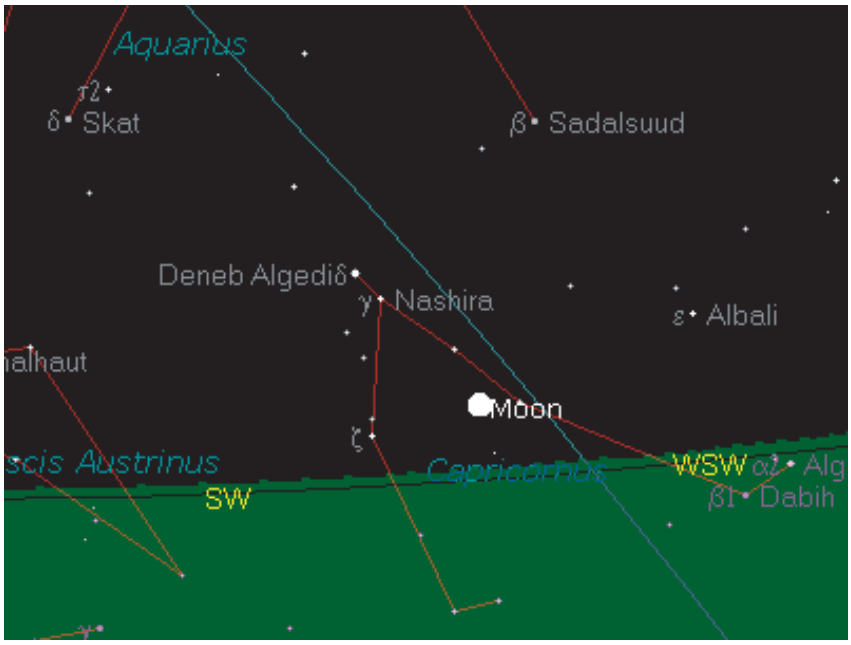
Sunset June 29, -567: the moon was balanced 7º above Antares

Comments: The moon is in the constellation Scorpius on June 29th. TheSky positions the moon 7º 57' above (north) of alpha Scorpii (Antares), while the Diary records the distance as 7º (3 ½ cubits). The difference is less than 1º (4 minutes).

REPORT 17 DIARY NO. -567

Nebuchadnessar Year 37 **Month** III **Day** 15 **Julian Year** -567 (568 BCE) July 4/5	**Time:** Sunrise 4:50 am **View:** West (moonset)

Diary Line 17: *The 15th, one god was seen with the other; sunrise to moonset: 7º 30'.*



Sunrise July 5, -567: sunrise to moonset: 30 minutes (7º 30')

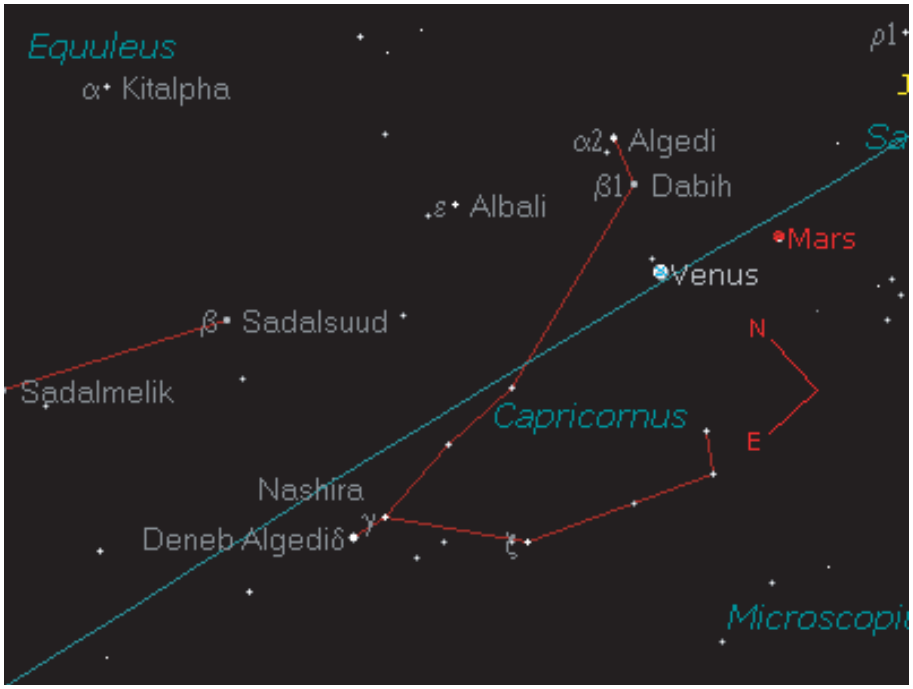
Comments: Babylonian Day 15, which began at sunset on July 4, segued to July 5 the next morning at sunrise. As the sun rose in the east, the moon was visible in the west and, consequently, "one god was seen with the other."

TheSky computes sunrise at 4:50 am and moonset 23 minutes later at 5:13 am. The Diary logs a time lapse of 30 minutes (7º 30') between sunrise and moonset. The Diary text differs by 7 minutes from the computed value.

REPORT 18 DIARY NO. -567

Nebuchadnessar Year 37 **Month** X **Day** 19 **Julian Year** -566 (567 BCE) Feb 1/2	**Time:** Sunrise 7:06 am **View:** East

Diary Line 3': *The 19th, Venus was 2 ½ cubits below ? Capricorni.*



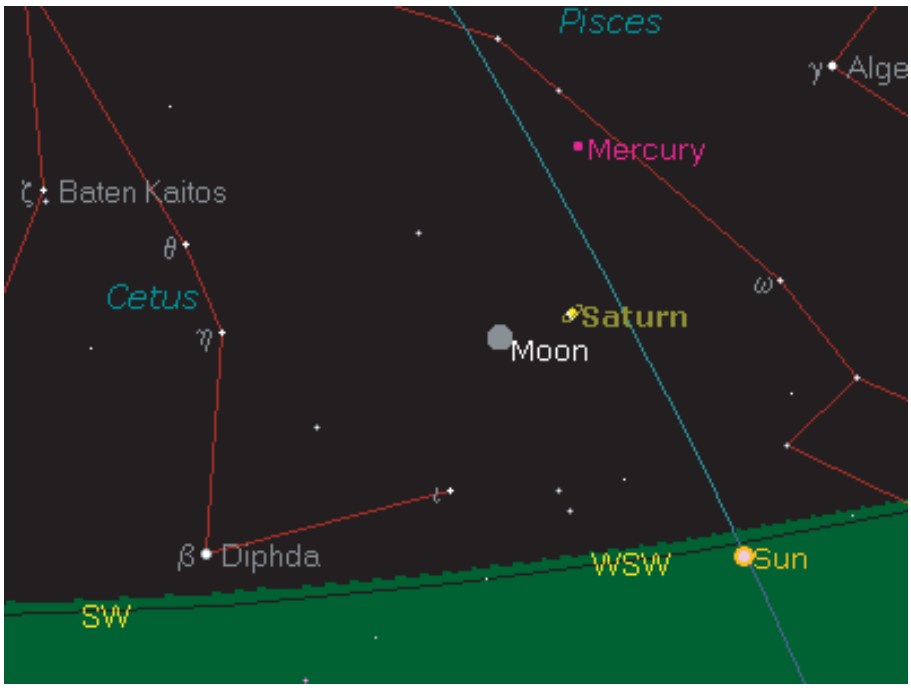
Sunset Feb 2, -566: Venus was 5º below star ? Capricornus

Comments: Venus rose shortly before sunrise on Feb 2nd. TheSky shows Venus was in the constellation Capricornus, as recorded in the Diary. The planet is below two stars -- Algedi at a distance of 6º 34' and Dabih 4º14' away. Though neither is a normal star, they are approximately at the distance of 5º (2 ½ cubits) recorded in the Diary.

REPORT 19 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XI **Day** 1 **Julian Year** -566 (567 BCE) Feb 12	**Time:** Sunset 5:44 pm Moonset 6:41 pm **View:** West

Diary Line 5': ... *the moon became visible in the Swallow; sunset to moonset 14º30, the north wind blew.*



Sunset Feb 12, -566: the moon became visible in the Swallow; sunset to moonset 58 minutes (14º30')

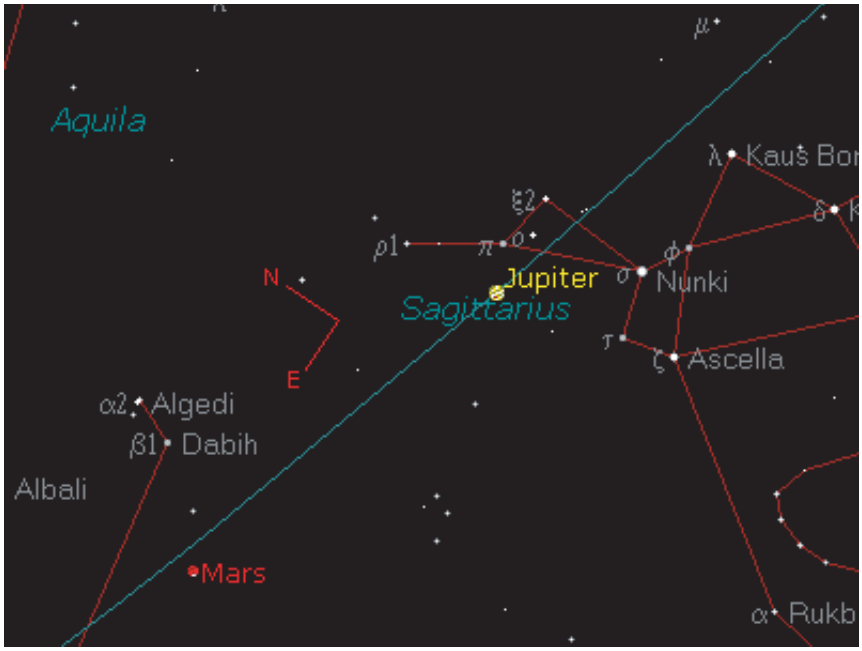
Comments: After New Moon, the lunar crescent first became visible around sunset on Feb 12th. According to TheSky, sunset occurred at 5:44 pm, and the moon set 57 minutes later at 6:41 pm. Babylonian astronomers recorded that 58 minutes (14º30') elapsed between sunset and moonset, a difference of 1 minute.

The identity of the Swallow is ill-defined. The Diaries associate the Swallow with the constellation Pisces. (See Report 26)

REPORT 20 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XI **Day** 1 **Julian Year** -566 (567 BCE) Feb 12	**Time:** Sunrise 6:58 am **View:** East

Diary Line 5': *At that time Jupiter was 1 cubit behind the elbow of Sagittarius.*



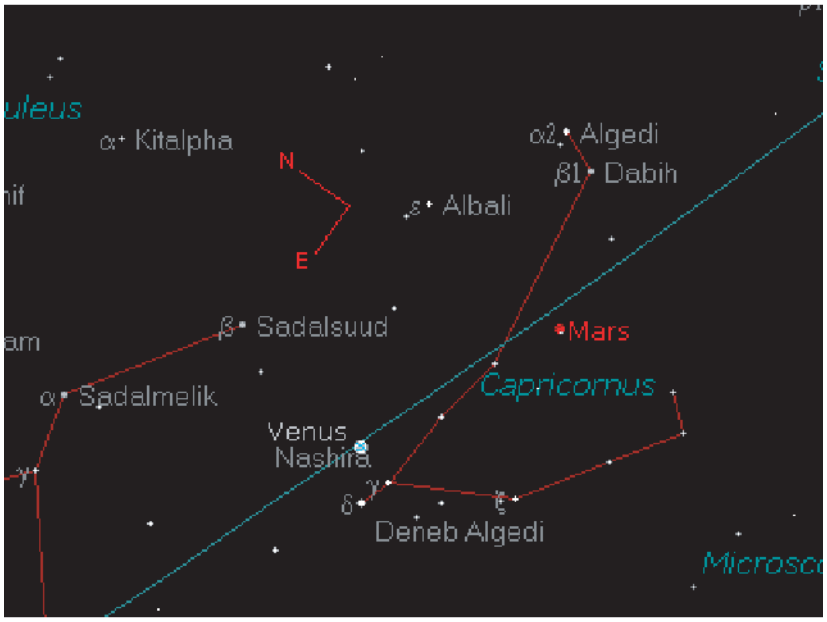
Sunset Feb 12, -566: Jupiter was 2º (1 cubit) behind pi Sagittarii (the elbow of Sagittarius)

Comments: Jupiter rose early in the morning before sunrise. The precise hour or even the day of the observation is unimportant, because Jupiter moves slowly across the panorama of fixed stars. Jupiter on Feb 12th is near the elbow of Sagittarius, the star labeled pi in the constellation Sagittarius. TheSky computes Jupiter is 1º 24' behind (east of) the star pi Sagittarii. The Diary records the distance as 2º (1 cubit). The mismatch is 0º 36', about 2 minutes of time.

REPORT 21 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XI **Day** 4 **Julian Year** -566 (567 BCE) Feb 15/16	**Time:** Sunrise 6:54 am **View:** East

Diary Line 6': *The 4th, Venus was balanced ½ cubit below (sic) Capricorn.*



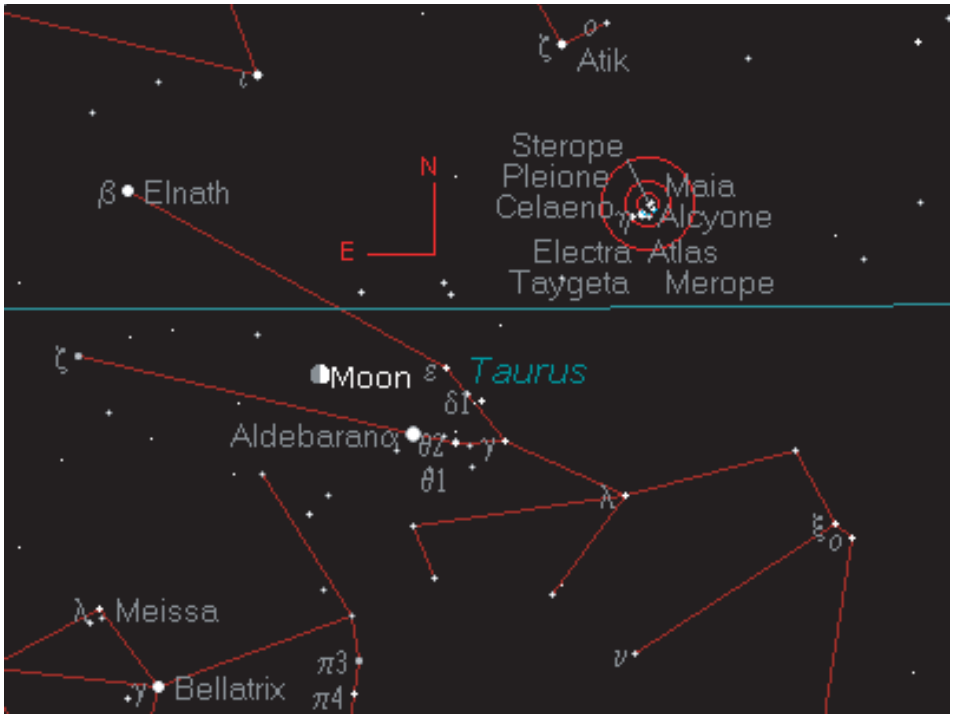
Sunset Feb 16, -566: Venus balanced below (?) Capricorn

Comments: Venus has not moved appreciably since its position was recorded on Feb 1 two weeks earlier. (Report 18) The planet is still in the constellation Capricorn. As in the prior Report, the position of Venus is not clearly defined - the sense of "½ cubit below Capricorn" is obscure. However, in agreement with the Diary, the Skyshot shows Venus in Capricorn.

REPORT 22 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XI **Day** 6 **Julian Year** -566 (567 BCE) Feb 17	**Time:** Sunset 5:48 **View:** High in the sky

Diary Line 6': *Night of the 6th, first part of the night, the moon was surrounded by a halo; Pleiades, the bull of Heaven, and the Chariot [stood in it…]*



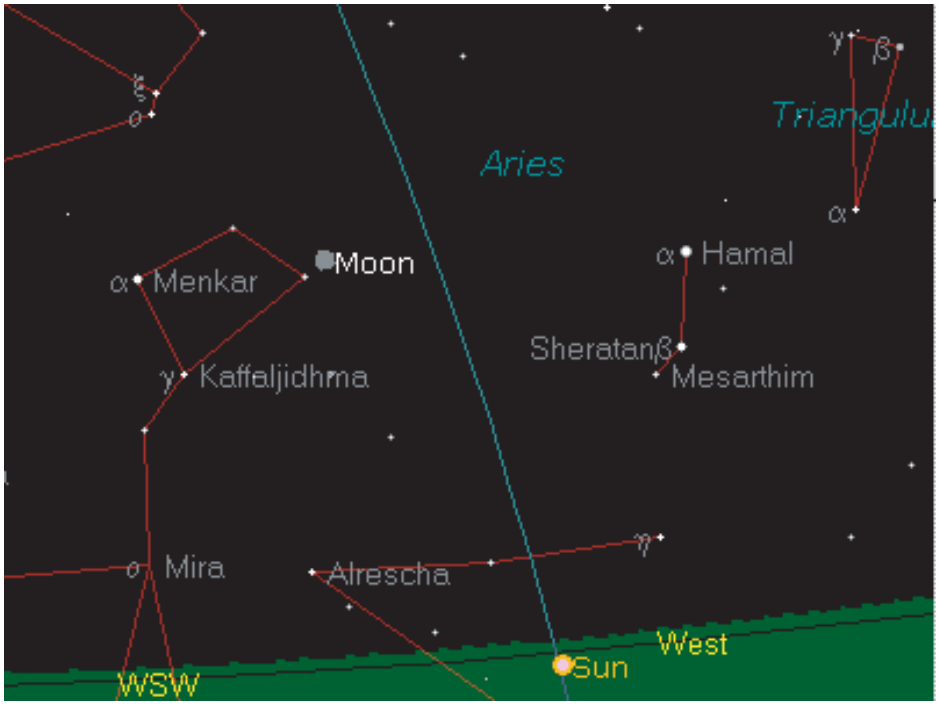
Sunset Feb 17, -566: the moon was surrounded by a halo that encompassed the Pleiades, the Bull of Heaven, and the Chariot

Comments: At sunset, the moon is high in the sky in the constellation Taurus. The Diary reports that the moon's halo surrounded the Bull of Heaven, the Pleiades (marked in the Skyshot with a bulls eye) and reached as far north as the Chariot (the region around the "bull's horns," ß Tauri and zeta Tauri). The Bull of Heaven, the Chariot and the Pleiades more or less constitute the modern version of the constellation Taurus. The Diary text tallies with the Skyshot.

REPORT 23 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 1 **Julian Year** -566 (567 BCE) Mar 14	**Time:** Sunset 6:06 pm **View:** West

Diary Line 12'&13': ... *the moon became visible behind Aries while the sun stood there; sunset to moonset: 25º, measured; earth shine. At that time, Jupiter […]were not visible.*



Sunset Mar 14, -566: : the moon became visible behind Aries; sunset to moonset: 25º

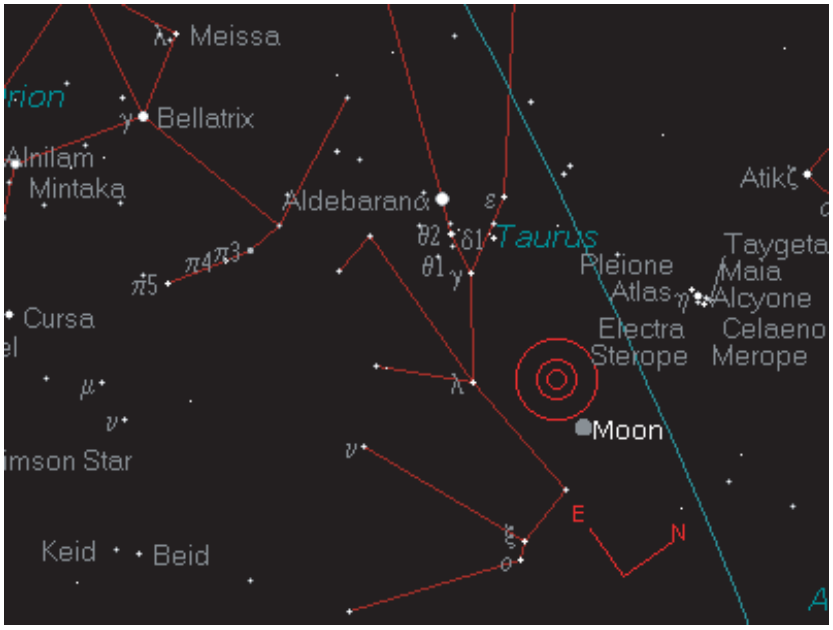
Comments: On Mar 14, the first day of Babylonian Month XII, the lunar crescent became visible *while the sun stood there*, i.e., while the sun was above the horizon prior to sunset. The Skyshot shows the moon is in Aries, as recorded in the Diary. TheSky computes sunset at 6:06 pm and moonset 91 minutes later at 7:37 pm. The Diary records the time interval from sunset to moonset is 100 minutes (25º) - 9 minutes more than the computed value.

As the Diary reports, Jupiter was not visible at *that time* - at sunset. It was in Sagittarius. (See Report 20) TheSky computes Jupiter rose in the night at 12:57 am.

REPORT 24 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 2 **Julian Year** -566 (567 BCE) Mar 15	**Time:** Sunset 6:06 pm **View:** West

Diary Line 13': *Night of the 2nd, the moon was balanced 4 cubits below eta Tauri.*



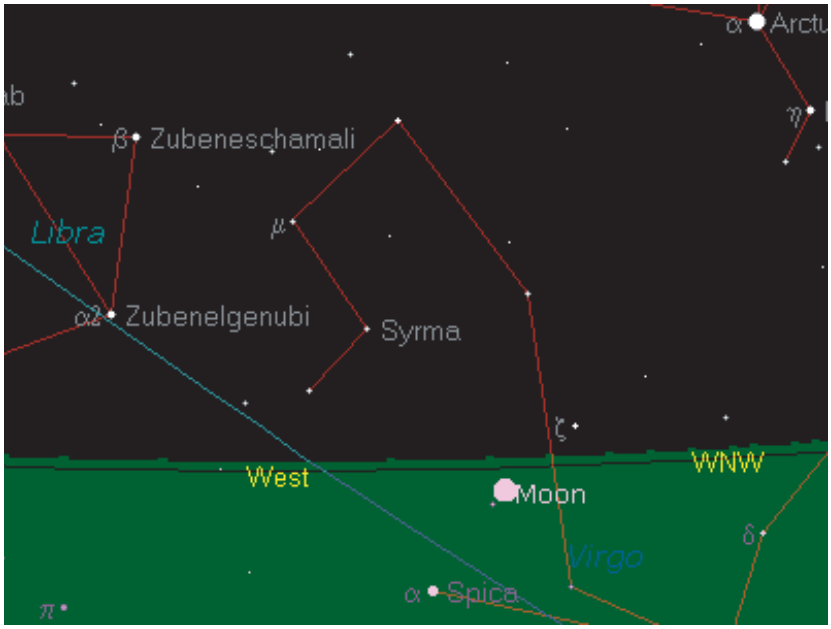
Sunset Mar 15, -566: the moon balanced 4 cubits [8º] below Alcyone

Comments: At sunset, the moon was in the constellation Taurus south of (below) the star eta Tauri (Alcyone of The Pleiades). The distance from Alcyone south to the moon, i.e., to the bulls eye, is 8º32'. This computed value differs by 32' from the Diary entry of 8º (4 cubits) - about 2 minutes.

REPORT 25 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 12 **Julian Year** -566 (567 BCE) Mar 25/26	**Time:** Sunrise 6:08 am **View:** West (Moonset)

Diary Line 16': *Night of the 12th, a little rain, … The 12th, one god was seen with the other, sunrise to moonset: 1º30';*



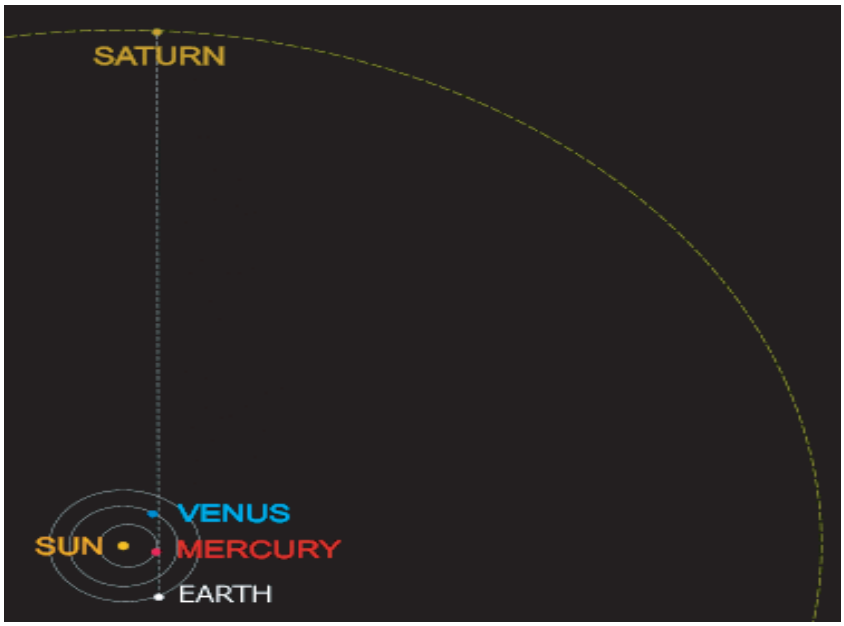
Sunrise Mar 26, -566: one god was seen with the other, sunrise to moonset: 1º30'

Comments: TheSky computes sunrise occurred at 6:08 am. The Skyshot above (view west) shows the moon had set before 6:08 am. TheSky calculates the moon set at 6:05 am, 3 minutes before sunrise. Thus, one god was NOT seen with the other. The Diary records that the moon set 6 minutes after sunrise (1º30'), while TheSky computes it had set 3 minutes before sunrise - a mismatch of 9 minutes.

REPORT 26 (1/3) DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 12 **Julian Year** -566 (567 BCE) Mar 25/26	**Time:** Sunrise 5:19 am **View:** East

Diary Line 16' to 18: *[Mercury] was in front of the "band" of the Swallow, ½ cubit below Venus, Mercury having passed 8 fingers to the east; when it became visible it was bright and (already) high… [Saturn] was balanced 6 fingers above Mercury and 3 fingers below Venus,*



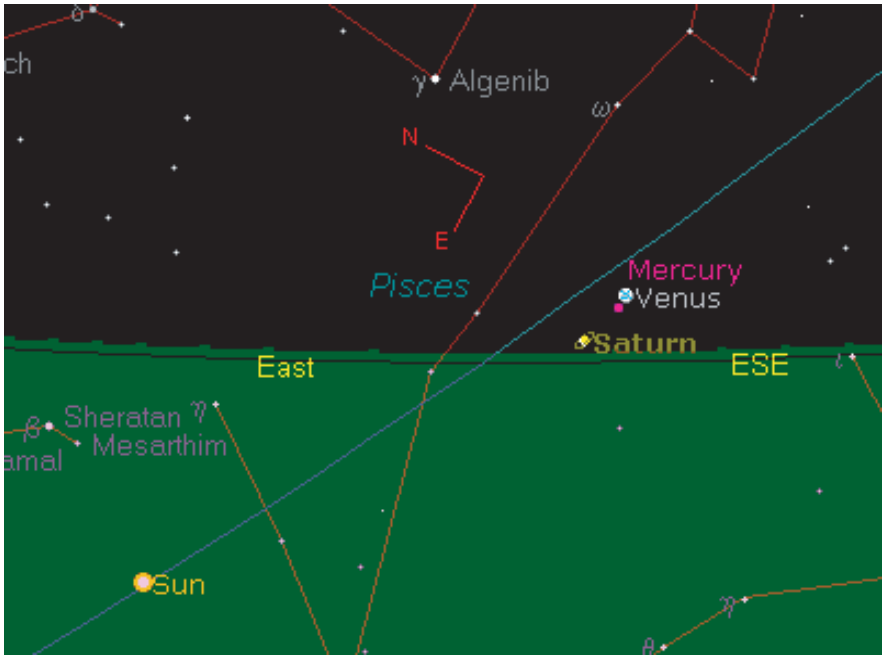
Mar 26, -566: Plan view of planet orbits

Comments: A plan view of the orbits of Saturn, Venus, Mercury and Earth shows an unusual configuration - all four planets lie along a line. As they move in their orbits (counterclockwise), they will remain aligned for several days. To an observer on Earth, the planets Saturn, Venus and Mercury appear near one another, clustered together.

REPORT 26 (2/3) DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 12 **Julian Year** -566 (567 BCE) Mar 25/26	**Time:** Before Sunrise **View:** East

Diary Line 17': *Mercury was in front of the "band" of the Swallow….*



Before sunrise Mar 26, -566: Mercury in front of a region of Pisces….

Comments: On Mar 26, -566 at 5:19 am, Mercury, Venus and Saturn became visible in the configuration pictured in the Skyshot. The sun below the horizon (bottom left) will rise about an hour later at 6:08 am.

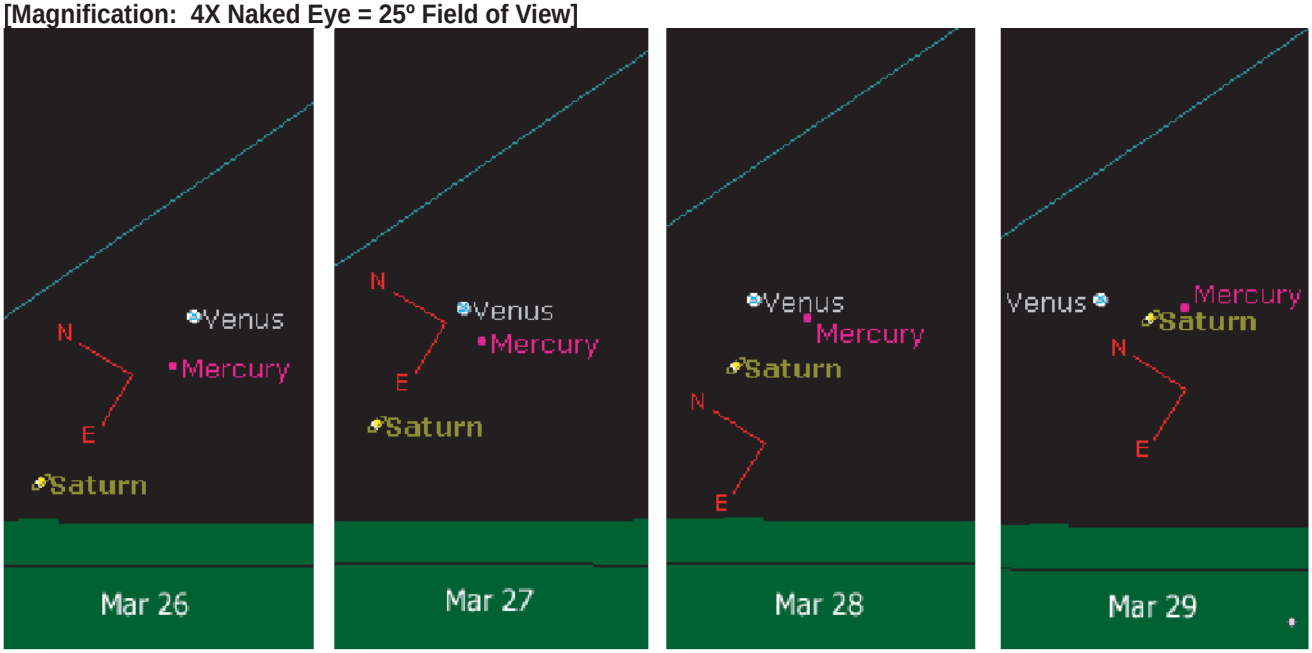
The *"band" of the Swallow* is ill-defined. The Diaries link the Swallow to the constellation Pisces. (See Report 19) The Skyshot shows Mercury rising along with the leading edge of Pisces. Presumably, *the "band" of the Swallow* refers to the trailing end of Pisces and, as recorded in the Diary, Mercury was in front of the "band".

REPORT 26 (3/3) DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 12 **Julian Year** -566 (567 BCE) Mar 25/26	**Time:** Before Sunrise **View:** East

Diary Line 17'&18': *when it [Mercury] became visible it was bright and (already) high. [Saturn] was balanced 6 fingers above Mercury and 3 fingers below Venus.*

[Magnification: 4X Naked Eye = 25° Field of View]



Before sunrise Mar 26, -566: Saturn 6 fingers [30'] above Mercury and 3 fingers [15'] below Venus.

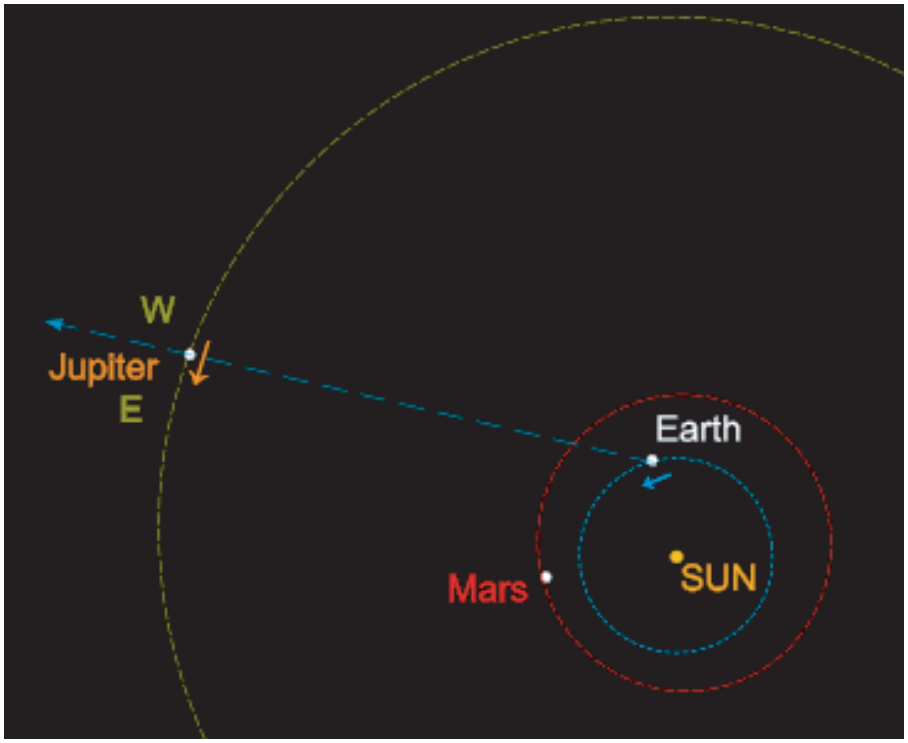
Comments: Each morning a bit before sunrise Venus, Mercury and Saturn rise in the eastern sky. From Mar 26th to Mar 29th, the planets shift position as if playing musical chairs.

The Diary does not provide a date for these observations. Neither does TheSky determine a configuration that matches the Diary entry - Saturn simultaneously 30' (6 fingers) above Mercury and 15' (3 fingers) below Venus. The closest match occurs March 28th when Saturn is 20' above Mercury and 25' below Venus. If March 28th were the missing date of the observation, then the mismatch would amount to several fingers (1 finger = 5'), less than 4 minutes.

REPORT 27 DIARY NO. -567

Nebuchadnessar Year 37 **Month** XII **Day** 30 **Julian Year** -566 (567 BCE) Apr 12/13	**Time:** Any time of night **View:** High in the sky

Diary Line 19'&20': *Jupiter which had passed to the east became stationary. At the end of the month it went back to the west.*



Apr 12/13, -566: Plan view of planet orbits around the time Jupiter becomes stationary.

Comments: To observers on Earth, the "normal" movement of planets relative to the fixed stars is west to east. The movement east to west is called "retrograde." When a planet switches from normal to retrograde motion (or vice versa), it passes through a "stationary" phase of several days.

As the Earth "overtakes" Jupiter (Plan View), sky watchers observe that the forward movement of Jupiter slows to a stop and becomes stationary relative to the starry backdrop. Thereafter, the planet is seen to move east to west in a retrograde motion.

The text of the Diary does not provide the date on which Jupiter became stationary. However, it does record that after a stationary period Jupiter started moving west at the end of Month XII (Apr 12th). TheSky computes that Jupiter started moving west on Apr 12th, in agreement with the Diary record.