This star chart shows the zenith, the point directly overhead, at the center of the chart. The circle represents the horizon, so the stars outside it are not visible, although some may rise in the east later in the night.

To find constellations and stars, hold the chart overhead and rotate the page until the correct direction labeled on the horizon circle is ahead of you. You should now be able to look back and forth between the star chart and the sky, and match the constellations.

The star chart includes only the brightest stars to avoid cluttering the chart. The constellations are labeled, and the lines connecting their stars will help you find these celestial groupings.

The Planets table gives positions on the sky (in astronomical right ascension and declination), their apparent magnitude, the time they rise, reach culmination (their highest point in the sky), and when they set. Mercury will be too close to the Sun to be seen for most of July. Venus and Mars are visible in the morning sky. Jupiter rises in the late evening and is also visible in the morning. Saturn is visible in the evening. If you have a telescope, you will be able to see Uranus and Neptune in the late evening and morning.

### July Moon Phases
- **Full Moon** July 6
- **Last Quarter** July 14
- **New Moon** July 21
- **First Quarter** July 28

### Planets

|--------|------|------|-----|-------|-------------|-------|
| Mercury| 7h 46m | +22° | 49' | –2.0  | 6h 06m      | 12h 46m | 19h 27m
| Venus  | 4h 39m | +19° | 44' | –3.6  | 3h 04m      | 9h 39m  | 16h 14m
| Mars   | 4h 01m | +20° | 05' | 1.1   | 2h 25m      | 9h 01m  | 15h 36m
| Jupiter| 21h 52m | –13° | 58' | –2.8  | 21h 12m     | 2h 52m  | 8h 33m
| Saturn | 11h 18m | +06° | 45' | 1.1   | 10h 04m     | 16h 17m | 22h 30m
| Uranus | 23h 48m | –02° | 09' | 5.8   | 22h 49m     | 4h 48m  | 10h 47m
| Neptune| 21h 53m | –13° | 19' | 7.8   | 21h 11m     | 2h 53m  | 8h 34m

Monthly activities for the Friends of the Institute for Astronomy can be found at [http://www.ifa.hawaii.edu/friends/](http://www.ifa.hawaii.edu/friends/).

Institute for Astronomy Special Events are announced at [http://www.ifa.hawaii.edu/specialevents/](http://www.ifa.hawaii.edu/specialevents).