

Grand Planetary Conjunction This Spring

A great gathering of planets will adorn the skies of twilight this spring!

*In fact, for a period several weeks, all the naked-eye planets,
known since antiquity, will grace the same region of sky.*

Here, in chronological order, is how this grand celestial reunion will unfold.

End of March: The Prologue

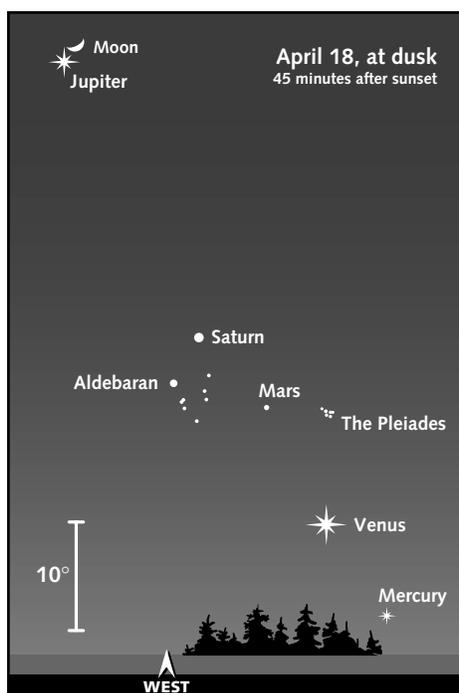
By the second half of March, the principal actors in this celestial drama will be in place. At twilight, Jupiter is already positioned high in the southwest. Lower, and to the right, Saturn is visible after the sky darkens; lower still, Mars is quite faint but distinguishable nonetheless, under a dark sky. Finally, during the second half of the month, brilliant Venus emerges above the horizon and appears progressively higher in the twilight.

All the planets fall, more-or-less, along an imaginary line, called the ecliptic, which disappears beneath the western horizon at a 45 degree angle. Note how, over the following weeks, the gap between Saturn, Mars and Venus narrows from evening to evening.

Mid-April: Enter Mercury

There is just one member left to complete the troop: Mercury the closest planet to the Sun is never far from the glare of our star,

which makes it hard to observe. But **as of April 16**, Mercury vaults above the western horizon. In just a few nights, it becomes easy to



spot at twilight, along with the other four planets previously mentioned. It is situated to the lower

right of Venus. Mercury will only be easy to see for about three weeks, and will be brighter at the start of this period than at the end.

The crescent Moon will appear to the left of Venus on the evening of April 14, near Mars on the 15th and above Saturn on the 16th.

Finally, **on April 18**, the Moon appears near Jupiter: The crowning moment occurs that evening, about 45 minutes after sunset. At a glance, you'll be witness to a scene that extends from the Earth beneath your feet, all the way to Saturn, nearly one-and-a-half billion kilometers away, with the Moon, Mercury, Venus, Mars and Jupiter in between.

Early May:

A Succession of Conjunctions

Over the first fifteen days of May, events quicken: A series of conjunctions demonstrate how rapidly the planets move with respect to each other.

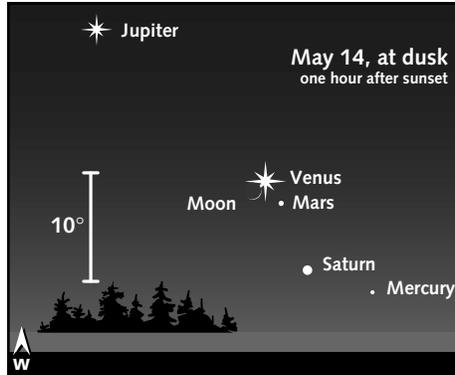
On May 4, Mars catches up to, and passes, Saturn: At this point, the Red Planet appears about 2 degrees north of the Ringed World. **On the evening of May 5**, dazzling Venus joins Saturn and Mars: The trio forms an almost perfect equilateral triangle with Mars at the apex and Venus and Saturn at the base.

On May 7, Venus is less than 3 degrees north of Saturn and comes “hazardously” close to Mars. On May 10, Venus and Mars are in conjunction: Scarcely one third of a degree separates the two planets, but Mars is considerably fainter than Venus, and harder to see in the twilight.

Mid-May: Last Chance

The evening of May 13, about 45 minutes after sunset, a thin crescent Moon hovers above the west-northwestern horizon, just to the left of Mercury... In fact, it's so close to the horizon (about 3 degrees) that you'll need ideal conditions, and an unobscured horizon, in order to see them. Binoculars might be necessary.

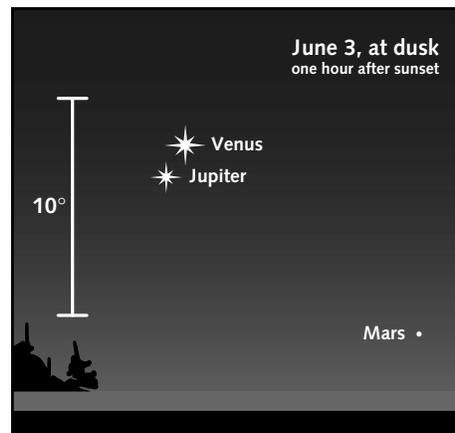
However, **the following evening, May 14**, the crescent Moon will be easier to see. This will also be your last chance to see all the naked-eye planets in one fell swoop: Mercury is already hard to see and will be lost in the glow of twilight over the following



evenings. The same for Saturn which also disappears in the twilight during mid-May.

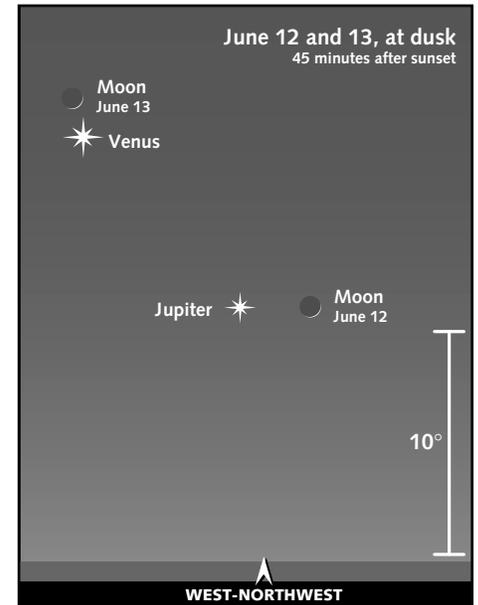
Early June: The Conclusion

During this period, as the evenings progress, Venus continues to climb above the horizon while Jupiter closes in. The two brightest planets meet **on June 3**, with Venus just a degree-and-a-half north of Jupiter. One could say they appear like two staring eyes in the deepening blue of twilight!



On June 12, a thin crescent Moon appears just two-and-a-half degrees to the right of Jupiter. By the following evening, June 13, the Moon has moved, and appears suspended 2 degrees to the upper left of Venus.

Mars disappears, in turn, during the second week of June, fol-



lowed by Jupiter a few days later. Finally, only Venus is left behind to illuminate the twilight. The great planetary conjunction of spring 2002 has ended. ★

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Advice for observing the conjunction

Much of the action takes place close to the western horizon: You'll need ideal conditions and an unobstructed horizon, clear of trees and buildings, to see all the planets. An elevated place to observe from is a definite advantage.

Events to note

The **spring equinox** occurs on March 20 at 14:16 EST and the **summer solstice** on June 21 at 09:24 EDT. Spring will last 92 d 18 h 08 min.
Eastern daylight time begins on April 7 at 02:00 — clocks move ahead one hour.

Watch for Comet Ikeya-Zhang

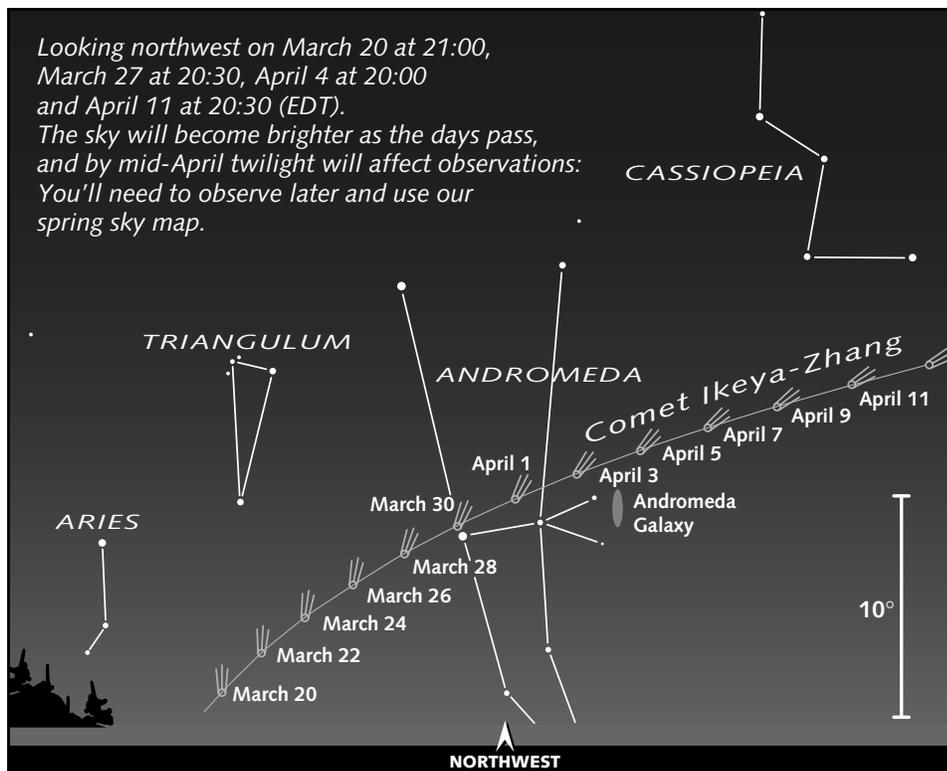
This latest comet was discovered at the beginning of February and will be visible to the naked eye during the first weeks of spring.

Officially catalogued as C/2002 C1 — the first comet (“1”) discovered in the first half of February (the “C” in “C1”) 2002 — Ikeya-Zhang was also named, as tradition dictates, after its co-discoverers Kaoru Ikeya from Japan, and Zhang Daqing from China. Ikeya discovered 5 other comets during the 1960’s, including the spectacular Ikeya-Seki, which grazed the Sun in 1965.

A series of observations, made during the weeks following the discovery C/2002 C1, provided an accurate description of its orbit. We now know that the comet has a very elongated orbit with a period of a few hundred years. Specialists at the Central Bureau for Astronomical Telegrams have even established that Ikeya-Zhang corresponds a with a comet that was observed in February and March, 1661! So this is not its first visit to the center of our solar system...

Prognosis

Ikeya-Zhang will not be as spectacular as some of the recent comets to pass our way, such as the mag-



nificent Hale-Bopp in 1997, but at the time this text was written, the comet was expected to be bright enough to see easily with the naked eye. Its gas tail could even stretch more than 10 degrees, but a dark sky (and a pair of binoculars) will be needed to see it fully.

Though Ikeya-Zhang will reach maximum brightness at the end of

March, it will be better placed for observing during the second half of April, at which time it will remain visible all night.

Note: **Around April 4**, Ikeya-Zhang will be just a few degrees from the Andromeda galaxy, which should provide a spectacular view of both objects... and an excellent photo opportunity! ★

Phases of the Moon

Eastern Daylight Savings Time (= Standard Time)*

New moon	First quarter	Full moon	Last quarter
March 13 at 9:02* p.m.	March 21 at 9:28* p.m.	March 28 at 1:25* p.m.	April 4 at 10:29* a.m.
April 12 at 3:21 p.m.	April 20 at 8:48 a.m.	April 26 at 11:00 p.m.	May 4 at 3:16 a.m.
May 12 at 6:45 a.m.	May 19 at 3:42 p.m.	May 26 at 7:51 a.m.	June 2 at 8:05 p.m.
June 10 at 7:46 p.m.	June 17 at 8:29 p.m.	June 24 at 5:42 p.m.	July 2 at 1:19 p.m.