

NAME: _____ DATE: _____

MOON, SUN, SEASONS

Use the accompanying data table to plot the positions of the sun and moon during the course of a year.

1. On the graph, plot the altitude of the sun with a star [*] and connect the points with a smooth curved line.
2. On the same graph paper, plot the altitude of the moon for EACH of the dates given. Use a plus [+] for a new moon, a triangle [Δ] for both quarter phases, and a square [\square] for a full moon.
3. Connect all of the points by date for the moon phases.
4. Complete the questions below.

QUESTIONS:

1. For the months listed below, which phase was the moon in at its highest point
 - a.) January _____
 - b.) June _____
 - c.) March _____
 - d.) September _____
2. The graph has the names of the seasons across the bottom. A Harvest moon is the full moon closest to the first day of fall (Autumn). What is the date of the Harvest Moon shown by the graph? _____
3. During which moon phases do spring tides occur? _____
4. How many spring tides occurred in the year shown by the graph? _____
5. In which month is the sun highest in the sky? _____
6. In which month is the sun lowest in the sky? _____
7. When is the full moon lowest in the sky? _____
8. Looking at the graph, summarize the relationship between the altitudes of the sun and the full moon in the summer and winter.

Summer _____

Winter _____

DATE	MOON PHASE	ALTITUDE SUN	ALTITUDE MOON
Jan 4	New Moon		25.9
Jan 13	Waxing Quarter		62.9
Jan 19	Full Moon	29.5	72.0
Jan 26	Waning Quarter		34.8
Feb 3	New Moon		33.1
Feb 11	Waxing Quarter		69.9
Feb 18	Full Moon	38.0	60.2
Feb 25	Waning Quarter		26.5
Mar 4	New Moon		45.3
Mar 12	Waxing Quarter		74.5
Mar 18	Full Moon	48.8	50.7
Mar 26	Waning Quarter		26.6
Apr 3	New Moon		58.9
Apr 10	Waxing Quarter		71.6
Apr 17	Full Moon	60.5	36.1
Apr 24	Waning Quarter		30.6
May 2	New Moon		66.5
May 9	Waxing Quarter		64.6
May 16	Full Moon	69.1	29.6
May 24	Waning Quarter		41.1
Jun 1	New Moon		73.7
Jun 7	Waxing Quarter		55.2
Jun 15	Full Moon	73.3	26.0
Jun 23	Waning Quarter		54.0
Jun 30	New Moon		73.4
Jul 7	Waxing Quarter		39.9
Jul 14	Full Moon	71.7	28.3
Jul 22	Waning Quarter		61.9
Jul 29	New Moon		69.1
Aug 5	Waxing Quarter		32.2
Aug 13	Full Moon	64.7	37.4
Aug 21	Waning Quarter		71.4
Aug 28	New Moon		56.0
Sep 3	Waxing Quarter		27.4
Sep 12	Full Moon	54.2	58.2
Sep 19	Waning Quarter		68.8
Sep 26	New Moon		37.9
Oct 3	Waxing Quarter		27.4
Oct 11	Full Moon	43.0	58.2
Oct 19	Waning Quarter		68.8
Oct 25	New Moon		37.9
Nov 2	Waxing Quarter		34.6
Nov 10	Full Moon	32.8	68.9
Nov 17	Waning Quarter		61.1
Nov 24	New Moon		28.4
Dec 2	Waxing Quarter		45.9
Dec 9	Full Moon	27.2	72.6
Dec 16	Waning Quarter		51.6
Dec 22	New Moon		27.3

Maximum Altitudes of the Moon and Sun



