

Name: \_\_\_\_\_

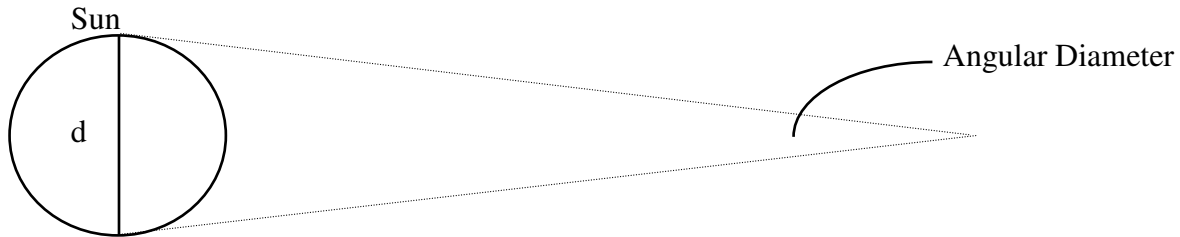
Earth Science

Lab 11: Solar Diameter

Date: \_\_\_\_\_

**Problem:** What can the solar diameter tell us about the Earth's motion?

**Procedure:** Astronomers have measured the sun's angular diameter closely during extensive periods of time. The table below represents the angular diameter of the sun (shown in degrees) as observed during 1967.



a. Plot a graph of the sun's angular diameter versus time from the data table below.

Date	Ang. Diameter	Date	Ang. Diameter	Date	Ang. Diameter
Jan 1	32.58	May 10	31.73	Sept 10	31.81
Jan 10	32.58	May 20	31.66	Sept 20	31.9
Jan 20	32.56	May 30	31.61	Sept 30	31.99
Jan 30	32.52	June 10	31.56	Oct 10	32.08
Feb 10	32.47	June 20	31.53	Oct 20	32.17
Feb 20	32.4	June 30	31.52	Oct 30	32.26
Mar 1	32.34	July 10	31.52	Nov 10	32.35
Mar 10	32.26	July 20	31.53	Nov 20	32.43
Mar 20	32.17	July 30	31.56	Nov 30	32.49
Mar 30	32.08	Aug 10	31.61	Dec 10	32.53
Apr. 10	31.98	Aug 20	31.66	Dec 20	32.57
Apr. 20	31.89	Aug 30	31.73	Dec 30	32.58
Apr. 30	31.81				

**Conclusion:**

1. What is the pattern of the changes in diameter of the sun?
2. What are some possible models of earth-sun motions which could support your interpretation of the data?
3. What shape of orbit for the earth or sun would best satisfy the data in this investigation?