

Lap - lab report example



**ASSIGN
BUSTER**

Lap

Experiment North Circumpolar Motion Viewing location and other present if any ment of Purpose: By tracking the apparent motions of stars relative to two set points, the North Star and the earth's surface, the observer visualizes his relative position on the earth's surface and appreciates the rotation of the earth. If the North Star remains on the northern horizon on the equator, then it should be visible in Denver all night between 50o - 90o in the northern sky. (That is 90oN-40o latitude Denver). (Astronomy 101)

Explanation of Procedure: First, the North Star, Polaris, was located in the sky using a compass for guidance. Directly facing Polaris, the sky chart led to the location of the Big Dipper. The two locations were charted. By pointing one finger at Polaris and one at the middle of the "cup" of the Big Dipper, the relative angle to the earth position was estimated. Each 45 minutes thereafter, the same observations occurred and those findings charted.

Data and Calculations: The chart results:

The Big Dipper remained approximately 15 degrees east of Polaris, but appeared to rise while Polaris appeared to lower in the sky.

Conclusions and Analysis: Since the earth rotates toward the east, the Big Dipper appears to rise in relationship to the more westward star, Polaris.

Lifelong observations of the sun and moon bear out this rising and setting phenomenon; however, viewing the path relative to another fixed point in space adds a layer of comprehension to the process. Interestingly, the Big Dipper, at first observation, seemed to be moving slightly east because the tail moved east relative to earth's horizon. By measuring to the middle of the "cup", the land visual cues were eliminated, and the Dipper then appeared

to simply rise straight up.

The results are as expected. Polaris does not move east or west noticeably, but does appear to rise then fall. The Big Dipper rises, but stays in a steady horizontal position from Polaris, but rises as Polaris falls during the observed timeframe.

References:

Wilson, " The Sky in Motion". Astronomy 101. 2011. Electronic. [http://www.astrodownunder.com/2208/09astronomy-101---lesson-8---the-sky-in-motion-](http://www.astrodownunder.com/2208/09astronomy-101---lesson-8---the-sky-in-motion-1)

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