

Dear Mr. Grueter and Mr. MacDonald,

Alex Drake Moore

Thank you for helping us see stars, galaxies, and constellations last Saturday, September 16th. Cub scouting is fun because we get to try new things, like star gazing. We all had a really fun time learning from you, and getting to look through your big, special telescopes.



Our friends can hardly believe we saw clusters of stars that are more than two million miles away in a neighboring galaxy! One of the best parts of the whole night was seeing stars that form an outline of ET lying down and pointing toward home.

We hope you had as much fun showing us the night sky as we did looking at it with you.

With howls of thanks,

Jon Cook
Lewie Greaney



Cub Scouts & Parents of Wolf Den 5 ~ Whitman, Massachusetts

Doreen Moore
Kelli Markes
Timothy
Kayla Moore
Leather: Reader
Jason Cook
Alex COOK
Hunter
Thomas
Lewis
Dad Cook
Raneta Dunn
Michelle Constantine
Ruth Dunn



On Saturday, September 16th, Den 5 traveled to Centennial Field in Norwell to meet representatives from the South Shore Astronomical Society for an evening of stargazing. The society president, Paul Grueter, and member Malcolm MacDonald patiently shared their knowledge of the night sky with seven of the den's scouts, their leaders, parents and some lucky siblings.

While waiting for the stars to come out, we played a round of "Simon Says," and a "My Alien Has..." memory game. The alien we saw at the end of the game sure was scary-looking!

Finally we could see *Polaris* (the *North Star*). But before we could begin, our "star teachers" needed to focus their special Celestron-Celestar telescopes. They used the star, *Vega*, as their "calibration star."



We had to look through the telescopes very carefully since they are super-fragile and expensive! Most of the time we could reach the viewfinder from the ground, but a few times we had to climb up on a step stool.

The first star we saw was *Arcturus*, more than 34 light-years away. We learned that a light-year (*ly*) is the distance light travels in 365.25 earth-days. Since one light-year equals over 5 trillion miles, just imagine how many miles are in 34 *ly*'s!



Next they showed us *Alberio*, the head of the constellation *Cygnus the Swan*. It's a "binary star," which means that the two stars orbit each other around one center. We were amazed to find out that it is 380 light-years away.



Then we checked out the *Great Cluster of Hercules*. It's also called *M13*, because it was the 13th discovery made by an astronomer named Messier. We could not believe that we were seeing stars 22,800 light-years away.



Most of us thought this star cluster in Cassiopeia was the coolest thing we'd seen because it looks like ET (lying on his side) pointing toward home. Do you see him? Here's a hint: the two brightest stars are his eyes, and he's pointing up and to the left.



The last thing we did was the most amazing though. We looked beyond our galaxy, the *Milky Way*, at this double star cluster in our neighbor galaxy *Andromeda*. These stars looked like a "sky dust bunny," but after all, they are 2 million+ light-years away!





**CERTIFICATE OF
APPRECIATION**

This certificate is awarded to the

SOUTH SHORE ASTRONOMICAL SOCIETY

for sharing your knowledge and time with

**Wolf Den 5 of Cub Scout Pack 22
Whitman, Massachusetts**