



MASON-DIXON ASTRONOMER

Westminster Astronomical Society of Maryland

Volume 16 Issue 6

June 1999

Star Light, Star Not-So-Bright

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COMING

ATTRACTIONS:

- 6/9 WAS monthly meeting
- 6/11-13 Mason-Dixon SP,
Spring Valley Park,
York, PA.
- 7/14 WAS monthly meeting
- 7/31 Astronomy Day Open
House, Westminster
Library, 10 AM – 5 PM

Regular monthly WAS meetings are held the second Wednesday of each month (except December) at the Bear Branch Nature Center (BBNC). The starting time is 7:30 p.m. Phone 410-848-2517 for BBNC.

Light Pollution May Not Be Just Killing The Stars by GW Gliba

Most amateur and professional astronomers have heard about light pollution and know that it reduces the number of stars that you can see with the naked-eye and with optical aid. However, I think few appreciate how bad the problem is from a quantitative aspect. A qualitative difference between the appearance of the Milky Way from the city of Greenbelt, and the mountains of Virginia is very obvious, but how does this translate into the actual number of stars that you can or can't see? The determination of a persons limiting magnitude at a particular site tells you much about the degree of light pollution present. The problem is getting worse every year as it becomes more difficult to find dark skies close to urban areas. It also has a detrimental affect on the nocturnal wildlife of the planet, including us. There may be unknown psychological effects from not being able to see the stars, and bad

physical effects from too much unnatural light at night as well.

The limiting magnitude for the average person from a fairly good site now days is about 6.0 to 6.5 magnitude. A great site, such as a remote site located on the oceans, deserts, or mountains of the planet, far away from civilization, will show stars as faint as 7.0 to 7.5 magnitude. Before the industrialized age and subsequent urban expansion, it was relatively easy to find such dark sites in the USA to observe the grandeur of the cosmos. Now, it is getting harder to find even a 6th magnitude sky within an hours drive of the metropolitan area. You can determine the limiting magnitude of your site using the North American Meteor Network (NAMN) charts available on the world wide web at:
<http://web.infoave.net/~meteorobs/imocharts.html>.

(Continued on page 3)

Next Meeting: June 9, 7:30 PM at Bear Branch:

Astronomy Open House

Astronomy Day in Westminster will be commemorated on July 31 at the Carroll County Public Library's main branch on East Main Street. A portion of the June meeting will be set aside for discussion pertaining to the organization of this event -- such as the displays, programs, and publicity.

One of the nature center's naturalists (Becky) will be on hand to drum up support and solicit ideas for August's astronomy camp at Bear Branch.

Some members with large refractors may set up after the business portion of the meeting to view Mars.

See more information inside.

H Star Points H by Curtis Roelle **A Star by Any Name Would Shine as Brightly**

Star Points is a popular-level astronomy column written by WAS member Curt Roelle, appearing in the Carroll County Times newspaper on the first Sunday of the month.

Have you perhaps ever wondered where star names come from? The common names in use for the best known stars date back to antiquity. Quite a few brighter stars such as Betelgeuse and Deneb have Arabic names. So do a number of lesser known stars like Alphard and Mizar. There are some 6,000 stars visible to the unaided eye. Do all of these have names?

The convention used by astronomers involves assigning Greek letters to the stars within a constellation. Although variations exist, typically the brightest star is designated Alpha, the next brightest Beta, on down to Omega. The letter is followed by the "possessive" or "genitive" form of the constellation name such that Leo the lion's brightest star Regulus becomes Alpha Leonis.

When the letters run out the stars are assigned integer numbers from west to east starting with 1. These numerical designations are called Flamsteed numbers. Various catalogs are employed for designating even fainter stars.

The Greek letters, Flamsteed numbers, and catalog designations are not true names. This gives rise to a ques-

tion that astronomers are often asked: "Is it possible for me to officially designate a name for a star?"

The quick answer to this question is no. The International Astronomical Union, a professional organization of astronomers, is the sole internationally recognized authority for assigning designations to celestial bodies and to features on their surfaces. The IAU explicitly states that it "dissociates itself entirely from the commercial practice of 'selling' fictitious names of stars."

A number of businesses exist in various countries of the world including this one that peddle stars for the purpose of allowing a customer to register a name of choice for a fee. Nothing may prevent an unscrupulous company from selling the same star multiple times, or from printing up certificates for stars which don't even exist. What are the chances that a customer would bother to check out the authenticity of the star by looking it up in a star atlas or through a telescope?

Another problem with the registries is that stars sold in one country might also be sold by a different company in another country. Who then is the true owner? Multiply this by the number of planets in the galaxy where

Continued on page 3
stars are being auctioned off and you begin to appreciate why the IAU deems the selling of stars, whose gar-



The Editor's Eyepiece: **HELP!**

I just completed one year as the newsletter editor and I really enjoy the job, but time is becoming a problem. Therefore I am sending this call for help. If anyone out there would like to try a spin as editor, please let me know. I can be flexible and step down entirely, or remain as an associate editor to share the load.

If a new editor does come forward, I would like to spend some time on the web version of the newsletter. We are not global yet, but we may have a host site available through new member Frank Gauthier. We did not achieve this goal before the end of Matt Orsie's term as president, but maybe we can at least be online by the new millennium.

On another note, I would like to extend a "Thank-You" to VP Brian Eney for arranging the visit last month to the Maryland Science Center. Although it was cloudy, the 8" Alvin Clark refractor pulled in nice views of gargoyles and pineapples. We experienced a great planetarium show and Melissa Jan, Observatory Coordinator, was a terrific host.

- Jeff Asner, Editor

REMEMBER - Submit Articles To:

mailing address: 4300 Oakwood Landing Ct
Dayton, MD 21036

phone number: 410-531-3826

e-mail: CattailJFA@aol.com

Light pollution has had a detrimental affect on the nocturnal wildlife in many areas. The decrease in natural habitats has already put increased pressure on several species of nocturnal animal life. Light pollution is known to have disrupted the migrations of birds, turtles, and insects in several locations, which has been documented by biologists. It also affects the photo period of many trees and other plants. There are probably many other unknown negative affects on other wildlife, including humans, who evolved on this planet and are also an intricate part of the Earth.

How many stars do these various limiting magnitude conditions represent to the astronomers and naturalists who study them and adore them? Below is a list showing the number of stars for each magnitude bin as taken from the BD star catalogue (epoch 1855), which covers the northern sky to -2 degrees Dec. as seen from Bonn, Germany. About 75% of these number of stars are above the horizon at any particular time. However, extrapolating the visible southern sky we can also see not included in the BD star catalog, the below bins do approximately equal the number of stars visible at any given time. Of course, seasonal variations do occur, but it will give a good average number of stars overall for each magnitude that you can expect to observe. The brighter stars will not be very accurately represented, but the ones fainter than about 4th magnitude will be. You must add all the magnitudes below any given mag-

nitude to get the total number of stars visible.

As can be seen, many more stars can be seen from a dark site than a light polluted site. In particular, notice the huge increase in the number of stars after 6th magnitude. That is what we are missing! It is a shame that the light pollution is cutting us off from the galaxy, for that is an intricate part of our natural environment, the Earth and Sky that makes us whole and human. Our natural heritage is vanishing before our eyes, and with it our connection to the beautiful stars that gave birth to this wonderful planet and us.

Stars Counts by Magnitude:
(Taken from the BD star catalog. Note: the brighter stars will be overly represented in the BD table.)

- 1st magnitude - 20 stars
- 2nd magnitude - 65 stars
- 3rd magnitude - 190 stars
- 4th magnitude - 425 stars
- 5th magnitude - 1100 stars
- 6th magnitude - 3200 stars
- 7th magnitude - 13000 stars
- 8th magnitude - 40000 stars

H H H H H

MASON-DIXON STAR PARTY JUNE 11-13:

The annual Mason-Dixon Star Party (not related to our club) will be this coming weekend. It will be held at Spring Valley County Park, York County, PA. This is off Exit 2 from I-83. There will be exhibits, talks, door prizes and star gazing (weather permitting). For information, contact Jeri Jones, 717-840-7226, JIJ276@aol.com, or <http://home1.gte.net/dmdewey/mdsp.html>.

StarPoints (continued from page 2)

stars are being auctioned off and you begin to appreciate why the IAU deems the selling of stars, whose gargantuan dimensions and vast distances prohibit delivery of the merchandise, as absurd.

Indeed, all the purchase of a star nets the customer is a paper certificate and perhaps the enjoyment of making someone happy by the gesture. Like the psychic friends hot line seen on T.V. star registry businesses are for entertainment purposes only. If one understands that star registries are just for fun and that one cannot truly buy a star or coin a name, then nobody should get hurt by the transaction.

The IAU's "Layman's Guide to Buying Star Names" is

on the web at <http://www.intastun.org/starnames.html>. It is a little tongue-in-cheek in places, such as in addressing the issue of seeking legal aid to protect a claim of stellar ownership: "Chances are [your lawyers] will either laugh their heads off or politely suggest that you could invest their fees more productively."

The stars are there for us all to enjoy. They belong to nobody and everybody at the same time. One part of a star that can belong to the individual are the light rays that enter your eyes the moment you look up and open them. Starlight cannot be bought or taken away.

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UNDER THE DOME



The Place to Find Out
What's Up

Stork News

It's a boy.

President Skip
Bird's new son
was born Friday, June 4th.
Congratulations!



NY Telescope Show – Brian Eney

On Sunday, May 16, I attended the Northeast Astronomy Forum & Telescope Show at the Holiday Inn in Suffern, NY. Although no observing sights were around, it really was a great experience. At times it did get too crowded, with estimates of about 2000 people.

Vendors were everywhere. Televue, Celestron, Questar, Virgo, just to name a few. Inside the tent, you would have thought you were standing in line for Star Wars tickets, not Tele-vue eyepieces. I waited an hour before I gave up.

There were also many lectures on various fields and aspects of astronomy. Mr. Joe Rao, meteorologist of a local news station and author of various books, gave a very entertaining, talk about the Leonids past, present and future. He started with his childhood frustration with cloudy skies back in 1966, and his continuing frustration of the past few showers. He has researched the past hundred years of showers. This reveals great showers historically follow years in which fireballs are numerous!! From that notion, this

year is IT!!! He will be hosting a trip to the Canary Islands in November for the Leo's. I think I am going!

A lecture given by Todd Gross, another meteorologists from Boston, called "Planning an Observing Session Based on Weather, Light Pollution and the Moon." It was very well researched and cross-referenced. He explained how to read the sky and from that figure out what is worth observing for that particular night. His research is available at www.weatherman.com.

Last but definitely not least, **Carolyn Shoemaker** spoke on "Comets and Craters - The Beginning at the End." She has discovered 400 asteroids, (41 Earth-crossers), and a record 32 comets. She discussed her work with her late husband, Gene Shoemaker. She came across as a very modest person, but proud of their accomplishments in astronomy and geology.

I had a great time, but next time I will remember to rob a bank. New York ain't cheap!!

Astronomy Open House All Day Saturday, July 31 – Curtis Roelle

We have booked the large meeting room at the Carroll County Library main branch for the purposes of holding an Astronomy Open House from 10:00-5:00 p.m. on Saturday, July 31. This day will mark our Astronomy Day festivities for 1999.

The location selected might be familiar to some of you. This is where we regularly commemorated Astronomy Day in the past before the construction of the Bear Branch Nature Center. Since the library is located in downtown Westminster larger crowds may be expected than we have had at the more remote Bear Branch location.

The facilities will be furnished

with several tables, portable chalk and cork boards, and a T.V. monitor and VHS tape player. The staff has informed us that we are permitted to hang objects such as posters on the walls, provided that the adhesive does not cause any permanent damage.

We have been given their blessing to set up telescopes in the courtyard along Main Street. Weather permitting safe telescopic observations of the Sun should be possible. Other outdoor activities could involve group projects such as a "parade of planets" during construction of a scale model solar system.

Computers have been a popular

item at Astronomy Days in the past. Several years back Sky and Telescope made note of a WAS Astronomy Day and its then novel approach of exhibiting computers and astronomy software at public events. We are hoping that members will bring things to share including posters and samples of your own or others' astrophotography, telescopes, computers, videotapes. Even having members just milling about for people to talk to and bounce questions off from can be of great importance.

Please help support WAS at this unique event on July 31.

H H H H H

June 1999 Lunar Almanac

Westminster, MD
 Time Zone: EDT (4)
 Latitude: 39.58 N
 Longitude: 77.00 W

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 RS 22:31 UT 02:40 ST 07:39 RA 116.6 TA 29.7 SA 243.5	2 RS 23:17 UT 03:29 ST 08:29 RA 115.7 TA 29.6 SA 243.6	3 RS 04:19 UT 09:22 ST 10:22 RA 113.5 TA 30.3 SA 243.1	4 RS 05:08 UT 10:20 ST 10:20 RA 113.5 TA 30.3 SA 243.2	5 RS 00:39 UT 05:57 ST 11:20 RA 110.0 TA 31.1 SA 241.8
6 RS 01:15 UT 06:46 ST 12:22 RA 105.5 TA 38.8 SA 256.8	7 RS 01:49 UT 07:34 ST 13:27 RA 100.1 TA 47.1 SA 262.6	8 RS 02:23 UT 08:24 ST 14:33 RA 94.1 TA 57.9 SA 269.0	9 RS 02:56 UT 09:15 ST 15:42 RA 87.7 TA 68.0 SA 275.6	10 RS 03:31 UT 10:08 ST 16:53 RA 81.3 TA 78.0 SA 282.1	11 RS 04:10 UT 11:03 ST 18:06 RA 75.2 TA 87.2 SA 288.0	12 RS 04:53 UT 12:02 ST 19:19 RA 69.3 TA 96.5 SA 292.6
13 RS 05:43 UT 13:04 ST 20:30 RA 63.9 TA 105.6 SA 295.6	14 RS 06:39 UT 14:06 ST 21:35 RA 57.9 TA 114.5 SA 298.5	15 RS 07:41 UT 15:08 ST 22:32 RA 51.8 TA 123.2 SA 299.3	16 RS 08:46 UT 16:07 ST 23:21 RA 45.7 TA 131.9 SA 299.4	17 RS 09:52 UT 17:02 ST 24:08 RA 39.6 TA 140.1 SA 299.3	18 RS 10:58 UT 17:53 ST 24:50 RA 33.5 TA 148.2 SA 298.7	19 RS 12:01 UT 18:40 ST 25:32 RA 27.3 TA 156.1 SA 297.3
20 RS 13:01 UT 19:25 ST 26:18 RA 21.1 TA 163.8 SA 295.3	21 RS 14:00 UT 20:09 ST 27:02 RA 15.0 TA 171.2 SA 292.2	22 RS 14:57 UT 20:51 ST 27:46 RA 8.8 TA 178.5 SA 287.6	23 RS 15:54 UT 21:34 ST 28:29 RA 2.7 TA 185.7 SA 282.4	24 RS 16:51 UT 22:18 ST 29:10 RA 3.6 TA 192.8 SA 276.3	25 RS 17:47 UT 23:03 ST 29:49 RA 11.0 TA 199.8 SA 269.8	26 RS 18:42 UT 23:49 ST 30:27 RA 18.6 TA 206.7 SA 261.8
27 RS 19:36 UT 24:35 ST 31:05 RA 26.1 TA 213.5 SA 253.3	28 RS 20:28 UT 25:17 ST 31:42 RA 33.7 TA 220.1 SA 244.7	29 RS 21:16 UT 26:00 ST 32:19 RA 41.1 TA 226.6 SA 235.3	30 RS 22:00 UT 26:42 ST 33:00 RA 48.4 TA 233.0 SA 225.3			

RS = Moonrise, upper limb on horizon.
 UT = Upper Transit, highest in sky.
 ST = Moonset, upper limb on horizon.
 Times are rounded to nearest minute.

RA = Azimuth of rising moon.
 TA = Altitude of moon at transit.
 SA = Azimuth of setting moon.
 Altitudes and azimuths are in degrees.

Moon phase is shown each day at 12:00 noon in the time zone indicated.

Moon image is not accurately oriented relative to the terminator.

The times listed are for standard refraction (34.5') and an observer at sea level. If these conditions do not hold, then actual rise and set times may differ.

Calendar by Ray Sterner
 Johns Hopkins Applied Physics Lab.
 Laurel, MD 20723

June 1999 Solar Almanac

Westminster, MD
 Time Zone: EDT (4)
 Latitude: 39.58 N
 Longitude: 77.00 W

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 MA 03:46 MN 04:31 MC 05:11 RS 05:43 EC 13:06 EN 20:29 EA 22:27 RA 60.1 TA 73.5 SA 300.0	2 MA 03:45 MN 04:30 MC 05:10 RS 05:42 EC 13:06 EN 20:30 EA 22:28 RA 59.9 TA 73.6 SA 300.2	3 MA 03:44 MN 04:30 MC 05:10 RS 05:42 EC 13:06 EN 20:31 EA 22:29 RA 59.7 TA 73.7 SA 300.4	4 MA 03:43 MN 04:29 MC 05:10 RS 05:41 EC 13:06 EN 20:31 EA 22:30 RA 59.6 TA 73.8 SA 300.5	5 MA 03:43 MN 04:29 MC 05:09 RS 05:41 EC 13:06 EN 20:32 EA 22:31 RA 59.4 TA 73.9 SA 300.7
6 MA 03:42 MN 04:28 MC 05:09 RS 05:41 EC 13:07 EN 21:05 EA 22:32 RA 59.3 TA 73.1 SA 300.8	7 MA 03:41 MN 04:28 MC 05:09 RS 05:41 EC 13:07 EN 21:05 EA 22:33 RA 59.1 TA 73.2 SA 301.0	8 MA 03:41 MN 04:28 MC 05:08 RS 05:41 EC 13:07 EN 21:06 EA 22:34 RA 59.0 TA 73.3 SA 301.1	9 MA 03:40 MN 04:27 MC 05:08 RS 05:40 EC 13:07 EN 21:07 EA 22:34 RA 58.9 TA 73.4 SA 301.2	10 MA 03:40 MN 04:27 MC 05:08 RS 05:40 EC 13:07 EN 21:07 EA 22:35 RA 58.7 TA 73.4 SA 301.3	11 MA 03:40 MN 04:27 MC 05:08 RS 05:40 EC 13:08 EN 21:08 EA 22:36 RA 58.6 TA 73.5 SA 301.4	12 MA 03:39 MN 04:27 MC 05:08 RS 05:40 EC 13:08 EN 21:08 EA 22:37 RA 58.5 TA 73.6 SA 301.5
13 MA 03:39 MN 04:26 MC 05:07 RS 05:40 EC 13:08 EN 21:09 EA 22:37 RA 58.5 TA 73.6 SA 301.6	14 MA 03:39 MN 04:26 MC 05:07 RS 05:40 EC 13:08 EN 21:09 EA 22:38 RA 58.4 TA 73.7 SA 301.7	15 MA 03:39 MN 04:26 MC 05:07 RS 05:40 EC 13:08 EN 21:10 EA 22:38 RA 58.3 TA 73.7 SA 301.7	16 MA 03:39 MN 04:26 MC 05:07 RS 05:40 EC 13:09 EN 21:10 EA 22:39 RA 58.3 TA 73.8 SA 301.8	17 MA 03:39 MN 04:26 MC 05:07 RS 05:40 EC 13:09 EN 21:10 EA 22:39 RA 58.2 TA 73.8 SA 301.8	18 MA 03:39 MN 04:26 MC 05:08 RS 05:40 EC 13:09 EN 21:11 EA 22:40 RA 58.2 TA 73.8 SA 301.8	19 MA 03:39 MN 04:26 MC 05:08 RS 05:40 EC 13:09 EN 21:11 EA 22:40 RA 58.1 TA 73.8 SA 301.9
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MA = Morning astronomical twilight, sun is at -18 degrees altitude.
 MN = Morning nautical twilight, sun is at -12 degrees altitude.
 MC = Morning civil twilight, sun is at -6 degrees altitude.
 RS = Sunrise, upper limb on horizon.
 EC = Evening civil twilight, sun is at -6 degrees altitude.
 EN = Evening nautical twilight, sun is at -12 degrees altitude.
 EA = Evening astronomical twilight, sun is at -18 degrees altitude.
 Times are rounded to nearest minute.

RA = Azimuth of rising sun.
 TA = Altitude of sun at transit.
 SA = Azimuth of setting sun.
 Altitudes and azimuths are in degrees.

The times listed are for standard refraction (34.5') and an observer at sea level. If these conditions do not hold, then actual rise and set times may differ.

Calendar by Ray Sterner
 Johns Hopkins Applied Physics Lab.
 Laurel, MD 20723

Westminster Astronomical Society

Events for June 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																													
		1	2	3 Look for 10th mag asteroid 3 Juno 0.6d North of Delta Ophiuchi	4	5 Mars is stationary; direct eastward motion resumes																																																																													
6	7 Last Quarter Moon, 12:20am EDT	8	9 WAS Monthly Meeting Bear Branch Nature Ctr., 7:30pm	10 Venus at greatest elongation, 45d east of Sun	11 Mason Dixon Star Party begins	12 Venus is 1d North of the Beehive Star Cluster																																																																													
13 New Moon, 3:03pm EDT	14 Earliest Sunrise of the year	15	16 Beautiful conjunction of Venus and the Moon	17 10th mag. 41 Daphne passes 2' north of 21 Herculis	18 Earliest morning twilight	19																																																																													
20 First-Quarter Moon, 2:13pm EDT	21 Longest Day of the year in northern hemisphere	22	23	24	25 Latest evening twilight	26																																																																													
27	28 Full Moon 5:37pm EDT	29	30	<table border="1" style="font-size: small; margin: 5px;"> <caption>May 1999</caption> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr> <tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr> <tr><td>30</td><td>31</td><td></td><td></td><td></td><td></td><td></td></tr> </table> <table border="1" style="font-size: small; margin: 5px;"> <caption>Jul 1999</caption> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td></tr> <tr><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td></tr> <tr><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr> </table>		S	M	T	W	T	F	S	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						S	M	T	W	T	F	S	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
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The Mason-Dixon Astronomer (MDA) is the monthly journal of the Westminster Astronomical Society (WAS) of Maryland and is mailed free of charge to members. Club officers are: Skip Bird, President; Brian Eney, Vice President; Phil Schmitz, Secretary; Paul Henze, Director at Large. Membership rates are \$15 Family & \$13 Single. Forward remittance to Treasurer Carl Koch, 16 Highstream Court, Germantown, MD. 20874. Use of material published herein is permitted if credit is given to the author and the MDA. The MDA is edited by Jeff Asner (410-531-3826). Written contributions are always encouraged. Deadline for submission is the 20th of the month prior to the month of publication. Items for publication may be submitted to the address below, or by internet electronic mail to "CattailJFA@aol.com". WAS Internet home page can be found at www.erols.com/roelle/was/.

The Mason-Dixon Astronomer

Westminster Astronomical Society
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- ★ Membership & ★
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- ★ Discount on ★
- ★ Astronomy Sky & ★
- ★ Telescope ★
- ★ Group Membership in ★
- ★ International Dark Sky ★
- ★ Association ★
- ★ Use of club equipment ★