

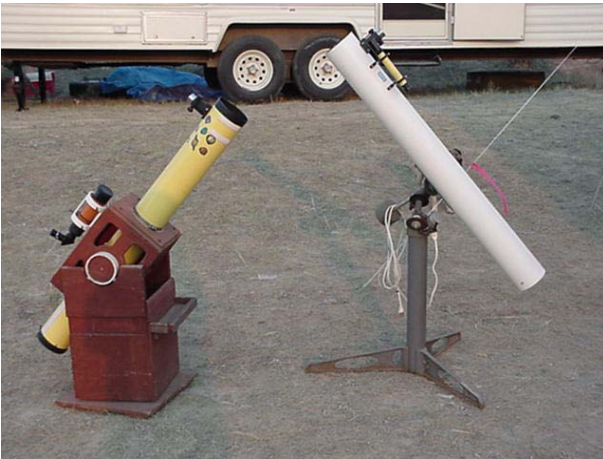
Inter-Stellar News

The Central Montana Astronomy Society

Special Issue

FREE!

Take me home!



Your first telescope How to chose one

By Rollin Grey

So you are ready to buy your first telescope. There are several things to consider before you make your purchase.

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Montana Star Watch

Montana Star Watch, Montana's own annual star party. Every year we draw people from all around the country for the get together. The Spokane club usually has quite a few members in attendance. They seem to arrive a week in advance every year. This means that to get the best camping spots, we should too! Of course, only a few of us are lucky enough to get that much time away from the job (and the family?) to spend that much time there. But why not bring the family along? There are more things to do than just stay up all night. You can go hiking, watch the wildlife, biking, sight seeing, there is fishing nearby, good talks and of course watching the clouds roll in! Star Watch usually gives us good weather, although 2003 was a wash out, previous years have been beautiful. Be sure to bring your cold

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About CMAS

The Central Montana Astronomy Society was formed in January of 1998 with the purpose of bringing together local amateur astronomers to do more observing and public outreach. CMAS started with a core group of 15 members, most of which are still active in the club. CMAS has grown to over 30 members and most of them are active in our outreach programs.

CMAS currently holds public programs at the Lewis and Clark Interpretive Center on a monthly basis with the exceptions of May, June, July and August. Nights are very short in the summer with sunset about 11:00pm and sunrise by 4:30pm. Most of the public is sleeping by then so we put off the public shows until September when the nights start getting longer. CMAS also has solar viewing programs where properly filtered telescopes are used to view the sun during the summer

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Beginner's Tips

The best way to start out in astronomy is to get a star chart and a pair of binoculars. The star chart will help you learn the constellations and the binoculars will give you a closer look at the brighter objects in the sky.

Don't be in a hurry to buy a telescope, there are plenty you can look through in the club. Learn your way around the sky first, then move on to the fainter, (and harder to find) objects. Remember, help is just a question away! @

Top Ten Reasons Not to Get Your Space Shuttle Serviced at Wards:

- Minor body repairs done with "18,000 mph duct tape".
- Mechanics keep screwing with the radio settings.
- Tank insulation with "bargain brand" foam.
- Coffee in waiting area tastes suspiciously like hydrazine.
- Recommended #1 by the Iraqi Space Agency.
- Tiles replaced with chunks of Styrofoam, spray-painted black.
- Small change missing from ashtray after every visit.
- If you look like a "60-Minutes" reporter, they won't let you in.
- Can't get out the door with less than a \$6,000,000 repair bill.

And the number one reason not to get your Shuttle serviced at Wards is...

They're no longer in business.



North America at night

Courtesy of the International Dark Sky Association

CALENDAR OF EVENTS

SPECIAL EVENT

PLACE –

DATE –

TIME -

SPECIAL EVENT

PLACE –

DATE –

TIME –

SPECIAL EVENT

PLACE –

DATE --

TIME –

Public star parties

SPECIAL EVENT

PLACE – LEWIS AND CLARK INTERPRETIVE CENTER

DATE – MONTHLY EXCEPT MAY, JUNE, JULY AND AUGUST

TIME – 6:00PM - MIDNIGHT

Public star parties

CMAS holds many public star parties during the year. Our usual star parties are held at the Lewis and Clark Interpretive Center near Giant Springs. These are held once a month with the exception of the summer months when the Sun won't set before 10:00pm. We are scheduled from 6:00pm to Midnight, weather permitting of course.

During the summer months we occasionally hold "sun parties" with solar viewing through filtered telescopes. This gives the public an opportunity to view our nearest star and examine our telescopes during daylight hours.

When special sky events occur, we will set up extra star parties for the public. Be sure to watch the newspaper for these special opportunities!

weather gear just in case, Montana's weather can go from summer to winter overnight! Star Watch usually draws about 100 people and a lot of telescopes. Scopes range from commercially made to home made and come in all types and sizes. Some people bring solar filters for their scopes so there is daytime observing as well. @

Planetary Facts

Sun

| | |
|------------------------|-----------|
| Diameter (km) | 1,392,000 |
| Rotation (days) | 25 - 35 |
| Escape velocity (km/s) | 617.6 |
| Visual magnitude | -26.74 |

Mercury

| | |
|------------------------------|------------|
| Diameter (km) | 4,878 |
| Distance to Sun (km) | 57,910,000 |
| Escape velocity (km/s) | 4.3 |
| Length of day (days) | 58.65 |
| Sidereal orbit period (days) | 87.969 |
| Mean orbital velocity (km/s) | 47.87 |
| Number of natural satellites | 0 |
| Maximum visual magnitude | -1.9 |

Venus

| | |
|------------------------------|-------------|
| Diameter (km) | 12,102 |
| Distance to Sun (km) | 108,200,000 |
| Escape velocity (km/s) | 10.36 |
| Length of day (days) | 243.01 |
| Sidereal orbit period (days) | 224.701 |
| Mean orbital velocity (km/s) | 35.02 |
| Number of natural satellites | 0 |
| Maximum visual magnitude | -4.6 |

Earth

| | |
|------------------------------|-------------|
| Diameter (km) | 12,756 |
| Distance to Sun (km) | 149,597,870 |
| Escape velocity (km/s) | 11.186 |
| Length of day (hrs) | 24.0000 |
| Sidereal orbit period (days) | 365.256 |
| Mean orbital velocity (km/s) | 29.78 |
| Number of natural satellites | 1 |

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The age of the person who will use it the most is important. A child's needs are different than adults and a senior's needs are different again. A child needs something small and easy to use, a senior may require something reasonably light with a larger aperture and a young adult may not mind packing out 100 pounds of gear!

Ease of use is another important consideration. If you can't point it or it takes a long time to set up, you won't use it much. The picture above shows two identical telescopes. The one on the left is a simple Dobsonian mount while the one on the right is on an equatorial mount. Equatorial mounts need to be aligned with the Earth to work properly. This can be confusing to a beginner. The other mount has a logical motion and this makes it easier to use.

The type of scope you choose. Different telescopes have different purposes, some are suited to the planets and the moon, others to deep sky work. There is no one perfect scope for everything. Generally speaking, refractors are good for the Moon and planets, whereas reflectors are better for galaxies and nebulas.

The quality of the scope is also important. A small scope boasting high magnifications at a low cost is probably not a very good quality instrument. It is better to pay a bit more for a good scope

Mars

| | |
|------------------------------|-------------|
| Diameter (km) | 6,786 |
| Distance to Sun (km) | 227,940,000 |
| Escape velocity (km/s) | 5.03 |
| Length of day (hrs) | 24.6597 |
| Sidereal orbit period (days) | 686.980 |
| Mean orbital velocity (km/s) | 24.13 |
| Number of natural satellites | 2 |
| Apparent visual magnitude | -2.0 |

Jupiter

| | |
|------------------------------|-------------|
| Diameter (km) | 142,984 |
| Distance to Sun (km) | 778,330,000 |
| Escape velocity (km/s) | 59.5 |
| Length of day (hrs) | 9.9259 |
| Sidereal orbit period (EY) | 11.8623 |
| Mean orbital velocity (km/s) | 13.07 |
| Number of natural satellites | 61 |
| Apparent visual magnitude | -2.7 |

Saturn

| | |
|------------------------------|---------------|
| Diameter (km) | 120,536 |
| Distance to Sun (km) | 1,426,980,000 |
| Escape velocity (km/s) | 35.5 |
| Length of day (hrs) | 10.656 |
| Sidereal orbit period (EY) | 29.458 |
| Mean orbital velocity (km/s) | 9.69 |
| Number of natural satellites | 31 |
| Apparent visual magnitude | 0.7 |

Uranus

| | |
|------------------------------|---------------|
| Diameter (km) | 51,118 |
| Distance to Sun (km) | 2,870,990,000 |
| Escape velocity (km/s) | 21.3 |
| Length of day (hrs) | 17.24 |
| Sidereal orbit period (EY) | 84.01 |
| Mean orbital velocity (km/s) | 6.81 |
| Number of natural satellites | 26 |
| Apparent visual magnitude | 5.5 |

Neptune

| | |
|------------------------------|---------------|
| Diameter (km) | 49,528 |
| Distance to Sun (km) | 4,497,070,000 |
| Escape velocity (km/s) | 23.5 |
| Length of day (hrs) | 16.11 |
| Sidereal orbit period (EY) | 164.79 |
| Mean orbital velocity (km/s) | 5.43 |
| Number of natural satellites | 13 |
| Apparent visual magnitude | 7.8 |

than to be disappointed by a poor one.

The aperture of the scope is a big consideration as well. In astronomy, size does matter. The larger the aperture, the more light it takes in and the fainter you can see. With more light available, higher magnifications are possible.

Portability is another key issue. If it is too bulky or heavy to move, odds are good it will become a conversation piece instead of a pleasure. @



months. Watch for these special events.

CMAS also does presentations at schools around the North Central parts of Montana and we have done presentations to other groups such as the Boy Scouts of America, the Children's Museum and the National Park Service in Yellowstone. These are done on a volunteer basis and usually at the members own expense.

CMAS is a not for profit organization. CMAS is available to any group that would like to learn the pleasures of the night sky. The only cost for these services is usually the price of fuel although donations are greatly appreciated. Your support of CMAS is really supporting our youth and our future. @

Pluto

| | |
|------------------------------|---------------|
| Diameter (km) | 2,300 |
| Distance to Sun (km) | 5,913,520,000 |
| Escape velocity (km/s) | 1.2 |
| Length of day (ED) | 6.3872 |
| Sidereal orbit period (EY) | 248.54 |
| Mean orbital velocity (km/s) | 4.72 |
| Number of natural satellites | 1 |
| Apparent visual magnitude | 15.1 |

Club Meetings

The second Wednesday of every month
7:00pm
Great Falls High School
Room SC 201

Contact us at:
CMAS – PO Box 25 – Simms, Montana 59477
Or <http://www.cmasweb.com>