

## Astronomy—and the Amateur

By John Hodges, President of the Regina Astronomical Society

I doubt very much that there is a reader of the **Blue Jay** who at sometime in his life has not seen and still vividly recalls an event that occurred in the heavens. It may have been an eclipse, a comet, a particularly bright meteor or fireball, or perhaps it was a look through a telescope. Yet so often I have heard a remark referring to the hobby of "star gazing" as a difficult, "too-deep-for-me" study. This is far from the truth; otherwise, how did the herders in Arabia come to know the sky so well? No one acquires the skill to identify each bird, tree, insect or flower without spending some time in doing it. Further, it is quite unnecessary to have a background of technical information. Astronomy, like any other hobby, can be a source of pleasure all year round.

Nature is lavish in its display of phenomena and this holds true when the observer turns to the sky and observes the heavens. It is not true that you have to have a telescope. Most amateur astronomers do their observing with the unaided eye and the occasional assistance of binoculars. Those who possess binoculars would do well to scan the night sky at random and, for real comfort, from a deck chair!

First then, how does one go about becoming actively interested in astronomy without becoming bogged down in the technicalities? Usually by asking questions of those who already pursue this interesting hobby. Questions like these are heard every evening that an open night is in session at the Regina Astronomical Society's observatory. How far can you see? How big does a star appear in a telescope? What is a star? What makes the harvest moon appear so large? Are there mountains on the Moon? Can you see stars in the daytime?

Some of these questions may appear ridiculous to us, but they do not seem so to the person asking them. Therefore, let us spend a few minutes answering them.

How far can you see? As far as light can travel. One of the nebulae visible to the naked eye, the great

nebula of Andromeda, is 1,500,000 light years away. A light year is the distance light travels in a year going 186,000 miles per second. We therefore see this nebula in a position where it was that long ago, not where it is now. As we look deeper into space we see further backwards in time.

A star in a telescope appears smaller than when seen with the naked eye. The greater the diameter of the aperture of the telescope the more nearly a true pin-point image is observed. Stars, even the nearest, are so far away that we see them as dots, never as a disc (as a planet appears through a telescope).

The question of power is a very common one. We seldom use powers above 250 diameters here at Regina. To do so is to magnify the turbulent air currents through which we are looking and to destroy the image. This condition of the air varies greatly, affording a few rare opportunities when it is very steady because then we can change eyepieces and go the limit on magnification. The finest "seeing" conditions are not found on the prairies, but we are afforded more clear average nights than many other areas of Canada.

What is a star? The nearest star is only 93,000,000 miles away, for it is our sun. The sun is a yellow star of medium size. It is interesting to note that if it should "go out" this instant it would be eight minutes before we knew about it. A star is a spherical mass in a gaseous state so hot it gives off light along with other radiation. Some even broadcast, as radio telescopes have found out in the last few years.

The illusion of the "harvest moon," seen most frequently in August, is just that — an illusion. When no one is watching, turn your back on it and look at it through your legs — the appearance becomes normal even if the observer's position is a little unusual!

Binoculars will show the rough, pock-marked surface of the Moon. A small telescope will reveal ranges of mountains and hundreds of craters, and arouse the curiosity of any nature lover. The deepest crater on the Moon is Newton, 142 miles

across and 24,000 feet deep. Renewed interest is being shown in comparing the geological formations found here on earth and those observed on the Moon. An effort is being made to try and explain the possible ways in which lunar features were formed.

Normally stars are not visible in the daytime. Stars have been seen in the past but these were Nova, stars that increased tremendously in brilliance, later subsiding, to become visible only in a telescope.

Amateur astronomy is never dull. New performers are constantly making unpredicted appearances. I refer to comets of which as many as a dozen have made their appearance during a year. There is an open season on comets all year round for amateurs. To be the first to discover one is a fine feather in the cap. I also refer to the sporadic meteor showers that cannot be forecast. These can be spectacular, but the time of their occurrence does not always allow us to see them during the hours we normally keep. When the Earth runs into these celestial dust clouds believed to be the remnants of the tails associated with comets, the sky may literally rain meteors, as in 1872 and 1885 when 1,000 a minute were estimated to be visible. A rather impressive display! And remember, a repeat performance could occur any time.

Now what is of interest and what is visible this spring? The Spring Equinox occurs March 20 at 3 p.m., the Summer Solstice June 21 at 10 a.m. The Earth's aphelion or point of greatest distance from the sun is reached July 5 at 1 a.m. Only one eclipse, an eclipse of the Moon, occurs in November.

During the first part of the year Venus will be performing at her best. Greatest brilliancy will occur May 16 in the evening sky. Mars will receive most attention during the latter half of the year. During 1956, Mars will be at its closest to the earth, although appearing somewhat to the south to us northern observers. This spring until June, Mars is visible only after midnight; about the end of July it will rise shortly after nine o'clock (MST). Jupiter, easily recognized from its brilliance, will be near the meridian at dusk during April so it will be visible all spring. Binoculars will reveal four of its satellites and also positively identify it. It is a fine sight, so don't miss having a look while the opportunity is at hand. Saturn, the planet with the ring around it at its equator, will be visible later in the spring, rising before midnight in April. A small telescope will reveal the ring that puzzled Galileo. It will, however, be rather far south in the sky this year and hence difficult to observe.

Still to talk about are the sunspots, Northern lights or Aurora Borealis, interesting stars, and nebulae and star clusters. I have only touched on a few of the things that an amateur can look out for. Why not take a look for yourself? Every clear night a display is brought on stage that defies description, yet so few see the individual members of the cast. I must warn you that if you do become interested in this drama you will be caught up and held by it. You become part of it, yet are left with such a feeling of insignificance! Truly a wonderful place, the universe!

## Bird Watcher or Seer ?

BOSWELL BELCHER, Dilke, Sask.

One must have infinite patience and energy for travelling many hours and miles afield with binoculars hunting down new species to be called a good bird "watcher." I have not that patience, but being a farmer, I spend many hours afield and cannot help seeing what is about the fields; I might be called a bird "seer." Now a bird seer gets as much satisfaction out of finding a species his friends have not seen as does a true bird watcher. The inconspicuous

American Pipit gave me that opportunity for a year or so but the enthusiastic bird watcher has now caught up with me. About May 5 or 6 I expect to see again one or two of these sleek and refined-looking birds running about the flats or slough edges on the open fields as I have done every spring since Stuart Houston and my sister Margaret "drafted" me into identifying birds (I always see them when I'm not looking for them as that is the only