



NRC Publications Archive Archives des publications du CNRC

Suggestions for Santa Tapping, Ken

This publication could be one of several versions: author's original, accepted manuscript or the publisher's version. / La version de cette publication peut être l'une des suivantes : la version prépublication de l'auteur, la version acceptée du manuscrit ou la version de l'éditeur.

For the publisher's version, please access the DOI link below. / Pour consulter la version de l'éditeur, utilisez le lien DOI ci-dessous.

Publisher's version / Version de l'éditeur:

<https://doi.org/10.4224/23002651>

Skygazing: Astronomy through the seasons, 2017-12-05

NRC Publications Record / Notice d'Archives des publications de CNRC:

<https://nrc-publications.canada.ca/eng/view/object/?id=43dd4364-2620-4b0a-ac48-88d5313b34c0>

<https://publications-cnrc.canada.ca/fra/voir/objet/?id=43dd4364-2620-4b0a-ac48-88d5313b34c0>

Access and use of this website and the material on it are subject to the Terms and Conditions set forth at

<https://nrc-publications.canada.ca/eng/copyright>

READ THESE TERMS AND CONDITIONS CAREFULLY BEFORE USING THIS WEBSITE.

L'accès à ce site Web et l'utilisation de son contenu sont assujettis aux conditions présentées dans le site

<https://publications-cnrc.canada.ca/fra/droits>

LISEZ CES CONDITIONS ATTENTIVEMENT AVANT D'UTILISER CE SITE WEB.

Questions? Contact the NRC Publications Archive team at

PublicationsArchive-ArchivesPublications@nrc-cnrc.gc.ca. If you wish to email the authors directly, please see the first page of the publication for their contact information.

Vous avez des questions? Nous pouvons vous aider. Pour communiquer directement avec un auteur, consultez la première page de la revue dans laquelle son article a été publié afin de trouver ses coordonnées. Si vous n'arrivez pas à les repérer, communiquez avec nous à PublicationsArchive-ArchivesPublications@nrc-cnrc.gc.ca.



SUGGESTIONS FOR SANTA

Ken Tapping, 5th December, 2017

We're taking a week off from the exploration of the Solar System to make suggestions to Santa. It is the time of year where choosing presents for the Family Astronomer becomes an important issue.

Telescopes and binoculars are the basic tools of the Backyard Astronomer. For beginners in astronomy, "Let that first telescope be a pair of binoculars". They are easy to use, deliver spectacular views of the Milky Way and star clusters, and can be used for other things such as observing wildlife. However, before buying anything, get some advice. Consult other backyard astronomers. There are centres of the Royal Astronomical Society of Canada across the country. Most backyard astronomers are members. Your local centre will have experienced observers who know what to choose and where to buy. Visit your local science store. Discuss your needs and try things out before buying. If you are not an expert, deal with experts. If you know more than the salesperson, go somewhere else.

Telescopes contain two main elements: an objective lens or mirror, which collects light and forms it into an image, and an eyepiece, which magnifies it. Since astronomical objects are faint, the bigger the objective the better. You need magnification to make the fine detail the telescope can discern large enough for our eyes to take in. This translates into a simple rule. For those with average eyesight, the maximum useful magnification is about 2 times for each millimetre of the objective lens or mirror diameter. For example, a telescope with a 75mm objective can be used at magnifications of up to 150 times. Going higher will not reveal more detail, and moreover will produce a fainter image.

In addition, your telescope will need a stable mount that is easily adjustable – in the dark. Today there are computerized "go-to" mounts, which automatically go to the requested astronomical object and track it. However, some of these are harder to use than others. Even though better from

an astronomical point of view, bigger also means heavier, more trouble to set up, and after a long observing session, more trouble to take down.

Binoculars are two small telescopes fixed together, and are usually used hand-held. Since you will have to hold them steady for several minutes at a time, they must not be too big or heavy. For that reason, binoculars with objectives no larger than 50mm are best, and since magnification also amplifies the effects of shakiness of your hands, choose a magnification of 7-10 times, no more. A common fault of binoculars is for the two telescopes to not be pointing in exactly the same direction. Up to a point our brains can fix this, at the expense of growing discomfort. Make sure the ones you buy are comfortable to use and using them for several minutes produces no discomfort.

A planisphere is a must-have for backyard astronomers. The ones worth getting consist of two plastic discs. On the lower there is a star map with a calendar around the edge. On the upper there is a window showing part of the star map beneath, and time of day round the edge. Match the local standard time on the upper disc with the date on the lower disc, and the window will show the constellations that are above the horizon. Get the one for your latitude. The science store will have these, along with other astronomical extras.

The "Observer's Handbook", published annually by the Royal Astronomical Society of Canada, is a gold mine, filled with astronomical information and listings of all the astronomical events for the coming year. This really is a must-have. Something other than the continuous cloudy weather we are having might be worth wishing for too, but there is no way to put that in a stocking.

Mars and Jupiter lie low in the dawn glow. The Moon will reach Last Quarter on the 9th.

Ken Tapping is an astronomer with the NRC's Dominion Radio Astrophysical Observatory, Penticton, BC, V2A 6J9.

Tel (250) 497-2300, Fax (250) 497-2355

E-mail: ken.tapping@nrc-cnrc.gc.ca