NOVA
NEWSLETTER OF THE VANCOUVER CENTRE RASC
VOLUME 2022 ISSUE 1 JANUARY FEBRUARY 2022

Astronomers, Inventors, Sexism and Eccentrics

Personal reflections on three astronomy books

by Michael Levy

Seeing in the Dark: How Amateur Astronomers Are Discovering the Wonders of the Universe

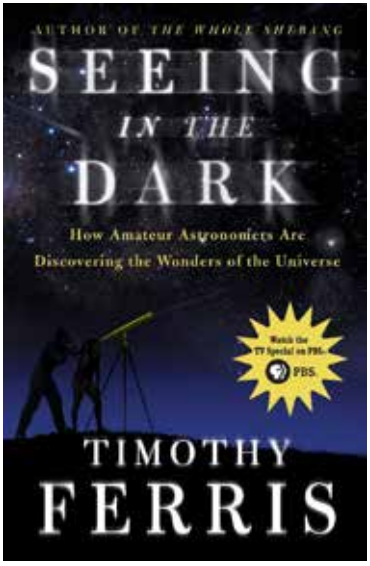
by Timothy Ferris, published by Simon & Schuster; Illustrated edition (July 8, 2003)

Starlight Detectives: How Astronomers, Inventors, and Eccentrics Discovered the Modern Universe

by Alan Hirshfield, published by Bellevue Literary Press (July 18, 2014)

The Last Stargazers

by Emily Levesque, published by SourceBooks (2020)



I have always been interested in astronomy, but my interest in stargazing started with a trip to Las Vegas. I went there not to gamble, but to represent the company I worked for at a trade show. I was supposed to stay just two nights. I must have done a good job, because on the second morning, I was asked to extend my stay for the rest of the week. Trouble was, I had finished the book I brought with me, and I am not a gambler. I needed a bookstore. Not so easy to find on the strip (I was staying at Ceaser's Palace). I asked around and was directed to a mall on the strip. Turns out, of course, that it did not have a bookstore. I mean, come on, who, other than some weird science nerd, goes to Vegas to read?

Well, luckily for me, the mall did have a science and nature store. This store had a small selection of books on science and astronomy. I choose *Seeing in the Dark* and it changed my life. As the author himself says in the preface, this book weaves together three strands: his own experiences "as a lifelong stargazer;" the second, the huge advances in observing ability available to amateurs; and finally, what he calls "what's out there—Saturn, the Ring nebula, the Silver Coin galaxy...." and so on. But what I love about the third strand is that the author starts with information about the object in question, but then continues with a visit, either to an observatory, or with a prominent professional or amateur astronomer. The author has a wonderful style. I just could not put the book down.

Towards the end of the book, the

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JANUARY 13 Zoom	FEBRUARY 10 Zoom	MARCH 10 Zoom
Don Hampton of the University of Alaska Fairbanks: Sunny with a chance of electron precipitation: Space Weather and what it means to you.	Speaker TBD. See Meetup for details.	Speaker TBD. See Meetup for details.

Observatory Update

by Carl Bandura

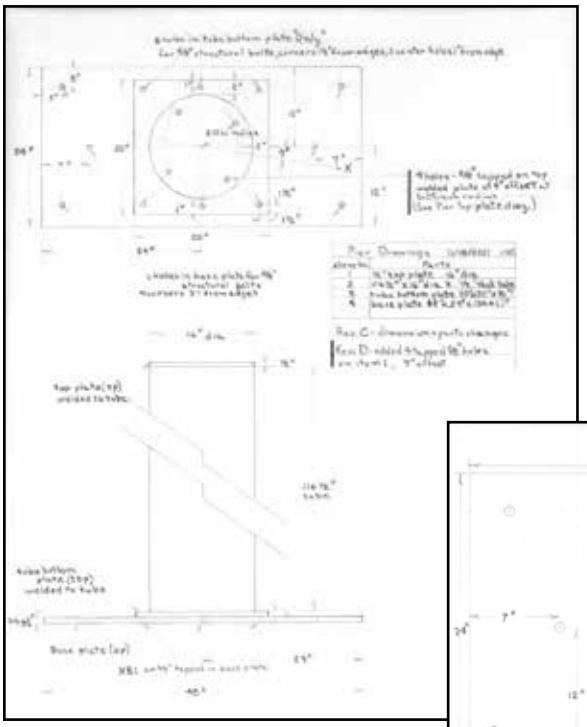
It's been a busy and eventful year for all of us, so keeping busy on our Observatory was a welcome distraction and opportunity during these difficult times.

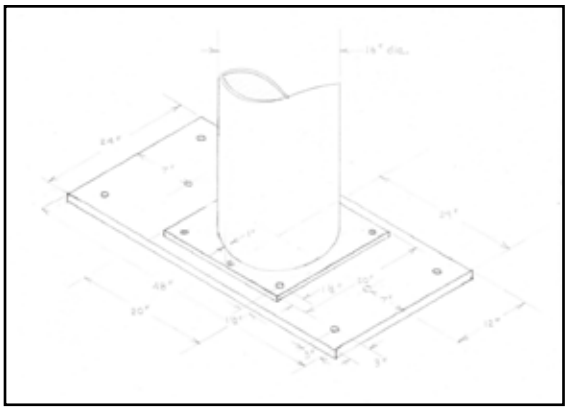
On a positive note, we have selected Brenco Industries, a metal fabricator, to build our pier, which will hopefully be ready sometime this January. I have included a photo of our latest pier drawings that were sent to Brenco.

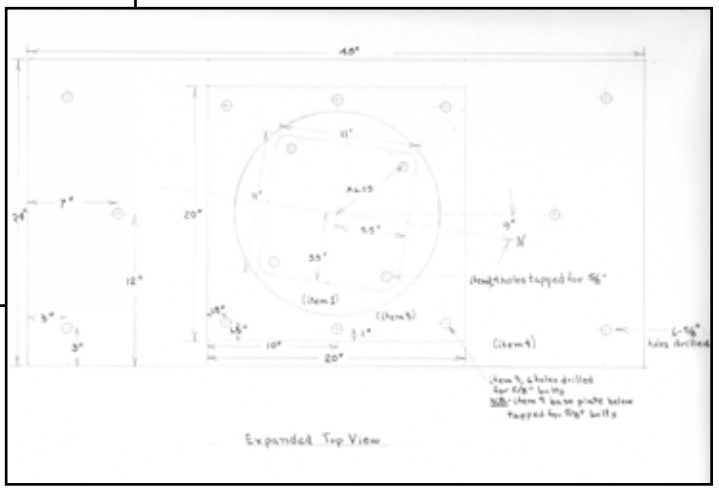
We have now received the new shutter motor and are anxiously waiting for warmer weather to have all the dome motor drives installed.

We had our first AOMO working group video meeting on December 18, 2021, that included: Alan Jones, Rick Schnieder, Preston Thompson, Phil Lobo, and myself. Discussions included new pier installation procedures, hardware components required for installation, building heating, additional one-time purchases required for new telescope project completion, and annual costs like generator fuel and housekeeping supplies. Work was divvied up amongst us and is being worked on while awaiting our new pier and better weather.

It's a new year, so we are anxious to get back at it and hope to inspire more members to join our working group who are able to volunteer some time (even a day would help) to bring this project to fruition. Please contact Carl Bandura; aomo@rasc-vancouver.com ✸







President's Message

by Alan Jones

Happy new year. A warm welcome to new and returning members to our Centre. In addition, thank-you to all our volunteers including our council, event volunteers, guest lecturers and others that contribute to our Centre in many other ways. It is an honor to be your president.

Our common interest is astronomy. It is the joy in learning about astronomy that inspires us. Current research tells us learning new skills and knowledge is good for our brain health. Furthermore, collaborative and engaged learning is the best method. This is how I hope you view our club and your engagement in collaborative learning.

2022 kicked off with our first event in collaboration with SFU Starry Nights on Jan 7th. We had many volunteers planning and behind-the-scenes moderating which means, in this case, answering and directing contributions to the virtual presentation via Zoom and YouTube. Six presenters gave

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About RASC

The RASC Vancouver Centre meets at 7:30 PM on the second Thursday of every month at SFU's Burnaby campus (see map on page 4). Guests are always welcome. In addition, the Centre has an observing site where star parties are regularly scheduled.

Membership is currently $89.00 per year ($52.00 for persons under 21 years of age; family memberships also available) and can be obtained online, at a meeting, or by writing to the Treasurer at the address below. Annual membership includes the invaluable Observer's Handbook, six issues of the RASC Journal, and, of course, access to all of the club events and projects.

For more information regarding the Centre and its activities, please contact our P.R. Director.

NOVA, the newsletter of the Vancouver Centre, RASC, is published on odd-numbered months. Opinions expressed herein are not necessarily those of the Vancouver Centre.

Material on any aspect of astronomy should be e-mailed to the editor or mailed to the address below.

Remember, you are always welcome to attend meetings of Council, held on the first Thursday of every month at 7:30pm in the Trottier Studio in the Chemistry wing of the Shrum Science Centre at SFU. Please contact a council member for directions.

2022 Vancouver Centre Officers

President	Alan Jones, president@rasc-vancouver.com
Vice-President	Robert Conrad, vp@rasc-vancouver.com
Secretary	Suzanna Nagy, secretary@rasc-vancouver.com
Treasurer	Phil Lobo, treasurer@rasc-vancouver.com
National Rep.	Nolan Smith, national@rasc-vancouver.com
Librarian	William Fearon, library@rasc-vancouver.com
Public Relations	Andrew Ferreira, publicrelations@rasc-vancouver.com
LPA	Leigh Cummings, lpa@rasc-vancouver.com
Dir. of Telescopes	Ken Arthurs, telescopes@rasc-vancouver.com
Observing	Robert Conrad, Ken Arthurs, observing@rasc-vancouver.com
Membership	Marla Daskis, membership@rasc-vancouver.com
Events Coordinator	Hayley Miller, events@rasc-vancouver.com
Education	Robert Conrad, Andrew Krysa, education@rasc-vancouver.com
AOMO	Alan Jones, Carl Bandura, aomo@rasc-vancouver.com
Merchandise	Kyle Dally, merchandise@rasc-vancouver.com
Webmaster	Renuka Pampana, webmaster@rasc-vancouver.com
Web Specialists	Karambir Singh, Renuka Pampana, webspecialist2@, webspecialist1@
NOVA Editor, Past President	Gordon Farrell, novaeditor@rasc-vancouver.com
Speakers	Andrew Ferreira, speakers@rasc-vancouver.com
At Large	Rob Lyons, Douglas Filipenko, Shay Pomeroy, Michael Levy, Karimbir Singh
Honourary President	J. Karl Miller

Library

The centre has a large library of books, magazines and old NOVAs for your enjoyment. Please take advantage of this club service and visit often to check out the new purchases. Suggestions for future library acquisitions are appreciated.

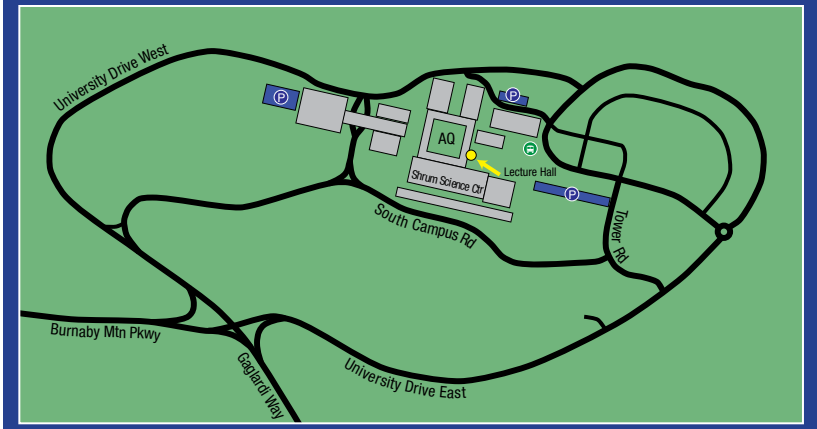
On the Internet

rasc-vancouver.com
astronomy.meetup.com/131/
www.facebook.com/RASC.Van
www.instagram.com/rascvancouver/
@RASCVancouver

Mailing Address

RASC Vancouver Centre
PO Box 89608
9000 University High Street
Burnaby, B.C.
V5A 4Y0

Map to Meeting Site



IMPORTANT NOTICE:

Our lectures have moved online until further notice due to COVID-19 and SFU having shut down most on-campus activities.

We will resume our physical lectures at SFU once is it deemed safe to do so.

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us short presentations on the 10 must-see events of 2022, the James Webb Space Telescope, LED lighting, sharing our collection of meteorites, a virtual tour of the Trottier Observatory, and viewing several astrophotographs processed by SFU Starry Nights volunteers using the observatory telescope data. Planning is underway for many more events this year.

Unfortunately, it seems we are still in the grips of the pandemic and will be extending our current virtual programming. Council had hoped that this year might be our return to in-person meetings. It is too soon to say at this point when that will come true. Our collaborative reality remains virtual for the time being.

Until next time, keep looking up.

Clear skies,
Alan Jones ✸

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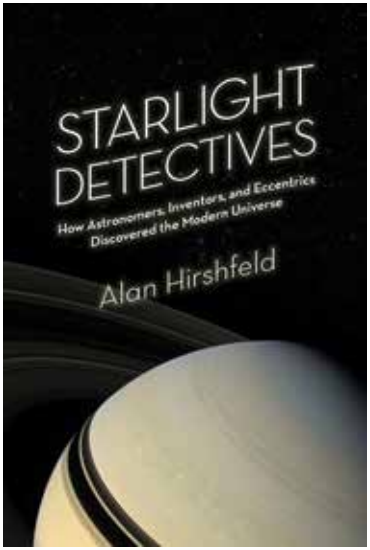
author suggests that you (the reader), if you do not have a telescope, use binoculars. The night I arrived back in Victoria after my business trip happened to be clear and dark. I went into the backyard with my binoculars and was just astounded by what I saw. It was only a matter of time, after that, before I got my first telescope.

This book gets 4.2 out of 5 on Amazon, and I always like to look at the 1-star reviews for books I love. Well in this case, the single one-star review is actually about the audio quality of the CD that the buyer bought—before Audio Books were delivered over the internet. One of the two-star reviewers makes a good point, I guess—the book is not aimed at experienced observers, and, if that is you, you might not learn too much from it. However, even Mr. Two-Star acknowledges that "There were a couple of good reads, most notable a few of the interviews, especially O'Meara. However, I found most of it to be written for someone with little to no exposure to the night sky. There was a great chapter on some of the accomplishments of amateur astronomers through history which was quite informative."



The second book on my list, *Starlight Detectives* is an account of how astronomy changed between 1840 and 1940, largely, of course, because of the transition from visual observing and recording to the use of photographic

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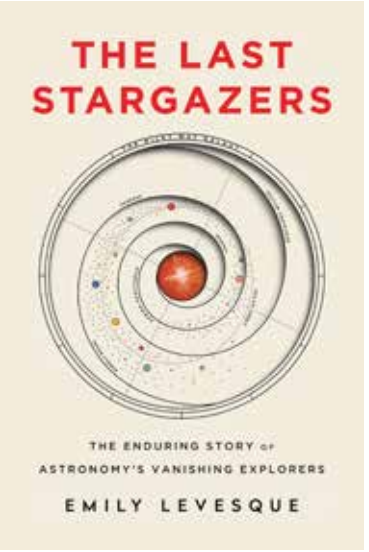
plates. But I love the approach the book takes: rather than simply document this history, the author essentially provides capsule biographies of the many "astronomers, inventors, and eccentrics" who led the way to these innovations. What appeals to me about it is that it is a great book for dipping in: it does not need to be read sequentially, because the chapters essentially stand alone. There are, of course, dependencies: it makes sense to read about Bunsen and Kirchoff (chapter 13) before reading about Fraunhofer (chapter 14) because his work built on their work. What I especially like about the book is that the author describes, in general terms, the science as well as the person in these chapters.

This book gets 4.8/5 on Amazon, with not a single review below four stars! Here is a sample review from a Canadian reviewer:

"This is a remarkable book describing the evolution of astronomy from the nineteenth to the twentieth century,



and the vast increase in knowledge and understanding of the universe that it birthed. The book is well written, informative, and captivating, with profiles of many forgotten scientists done with great human interest."

Finally, the book *The Last Stargazer* will give you a very good idea of what life is really like for a professional astronomer today. Professor Levesque is a professor at the University of Washington. She is a very engaging speaker and writer. The book is both a personal memoir of her journey into the world of astronomy, and an introduction to many of the major players and telescopes of today's astronomy. Once again, high marks on Amazon (4.7). I fully agree with this review:

"This is a superb book by an outstanding science communicator who is also a world class astronomer. Emily Levesque takes you with her into the domes of some of the world's largest telescopes and shares epic tales from the pioneers of astronomy during the past 100 years. From the era of glass photographic plates to the nearly fully automated telescopes of today, this is a great survey of modern astronomy. And best of all, it's FUN to read!"

As I mentioned earlier, I have this compulsion to look at the bad reviews for highly-rated books. Sometimes they are just silly (for example,

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Membership has its Privileges!

Are you tired of looking at the same objects again and again (planets, moon, etc.)? Is your telescope collecting dust because it's hard to locate deep sky objects? Would you like to bring your observing to a stellar level? Robert Conrad, our new observing director, revived the Vancouver RASC observing group and invites you to join by sending him an email at observing@rasc-vancouver.com. Some of the benefits of belonging to this group include:

- Hands on training on how to operate the SFU Trottier observatory
- Weekly observing sessions at the observatory or at dark sky locations
- One-one-one coaching on how to locate thousands of objects in the night sky
- Attend small interactive seminars delivered by Robert on a range of topics including failsafe star-hopping, charting challenging objects and understanding the motions of the cosmos
- Learn to make your telescope dance by locating objects such as asteroids, nova, and supernovae
- Spectroscopy and imaging training from Howard Trottier and an opportunity to collaborate on observatory research projects
- Updates on observable sky events happening during the week like asteroid/comet/deep sky conjunctions
- Access to observing guides and lists that Robert created that took hundreds of hours to create and will help with planning observing sessions
- Knowledge and expertise from other observing group members
- Learn how to quickly and efficiently find and star-hop to deep sky objects using a range of binoculars and telescopes

Upcoming Events

August
21 - 28 – Mt. Kobau Star Party

December
8 – AGM

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"the book was damaged in the mail"). Sometimes they are inconsistent with the rating. Occasionally they are thoughtful and interesting even if I find myself disagreeing with the conclusion. The low reviews of this particular book tell a different, and to me, offensive story which highlights the difficulties women continue to face as professional scientists. Amazon's Canadian website has no one or two-star reviews, and a single three-star review (lifted, as it happens, from the American site). Here is the three-star review in full, but know up-front that I find this to be very problematic.

"A (very bright) woman and her rise up through the ranks of a predominately male profession.

"Nothing new here but it's a very personal romp through a scientist's career and an easy, interesting read. What comes as a surprise is that, by most standards, she's also gorgeous, which, for many women—and maybe some men—would create a formidable if hackneyed challenge. But this one is so genuine, honest, and human that she probably knocked the old boy's network and establishment on its collective butt. Sexism is nowhere even mentioned. Didn't need to. The only down sides were: 1. the science was a bit lightweight and 2. the tone is a bit chatty—like she was talking to the garden club. But as a role model for girls even considering science as a course of study, she is hugely relatable. Not as a real life mentor but I'll bet she will write back to my granddaughter and be just as supportive as one."

I am not sure if this can be categorized as a "micro-aggression"—I think it goes way beyond that. The tone is paternalistic and condescending. Imagine if I started the review of the first book by pointing out that the author of the first book, Timothy Ferris, much to my surprise, was an incredible hunk of a man. The review did make me wonder how often professional women face these obnoxious remarks from men who are not only oblivious to their sexism but believe themselves to be paragons of gender virtue.

It is interesting that this author says, "Sexism is nowhere even mentioned," because the other review that I find offensive, also on the American Amazon site, but not shown on the Canadian one, is titled "The First Half of the Book is Pretty Good. Then She Starts a Diatribe on Sexism and Racism." Now it turns out (contrary to what reviewer number one above says), that there is a chapter devoted to Sexism and Racism in Astronomy. It is chapter six. (The book has thirteen chapters). Prof Levesque relates a story, probably common for women scientists, about a man who seems confused that she is in charge of the Keck Telescopes for a night of science. She then talks about some of the problems women face in the profession, such as, for example, how the Monasteries at Mount Wilson and Palomar in California, where astronomers could stay during telescope use, had strict rules against allowing women to sleep there, and women could not officially apply for telescope time or serve as a Principle Investigator. True to the spirit of the rest of the book, this introduction segues into a discussion about some of the pioneering women in the field, about people of colour, and about the ongoing disputes about the use of land in Hawaii that is considered sacred by many native Hawaiians. It is as interesting as any of the other chapters in the book.

The second reviewer ends the review like this:

"How this ancillary crap was left in the book by the publisher and editor is beyond me. I wanted to read about the people who are 'The Last Stargazers,' not this socio-political junk.

"So in the end, I did something to this book that I have never done to any of the almost 1000 books in my library. I threw it in the trash and stopped reading it. I will NEVER *buy another book that she writes."*

Well, boo-hoo.

I can tell you that when I read the book, I found it to be thoroughly engaging, interesting and informative. Chapter six did not strike me as being jarring or out of kilter—just more thoughts from the author built on their own career experience.

These are three wonderful books that I can highly recommend. ✸

An Old Workhorse

by J. Karl Miller

Since the invention of the telescope and its use for astronomical purposes, the exploration of the universe has progressed at first slowly, and then much faster. That also included advancement in the performance of telescopes themselves. The two main types of telescopes, refractors and reflectors have been around for about 350 years.

Among both types of telescopes, I own one that is my particular favourite. It's a 75mm refractor, purchased used in 1964; its true age I don't know. Here is a picture:

The telescope has the brand name "Polaris," and someone told me that it is the European version of the "Unitron" brand which was very popular here in North America in the middle of the last century. It has an achromatic objective—chromatic aberration is almost unnoticeable because of the large f-ratio. The telescope produces beautiful views of the major planets, the Moon, and open star clusters, but is just on the borderline of resolving globular clusters into individual stars (i.e. M 13). It's also pretty good at showing the brighter nebulae (Orion nebula, Dumbbell, etc.) and double stars (Mizar, Alcor, the "double double" Epsilon Lyra when pushed to 130 times magnification power, and much more). It's my preferred telescope for Public Astronomy Nights.

In previous centuries, instruments of this size and performance (3", 4", and somewhat larger telescopes) were used to do serious scientific work. For instance, Johann Heinrich von Mädler and Wilhelm Beer produced a highly accurate atlas of the Moon (in four volumes from 1834 to 1836). It was used by astronomers for over a century. Mädler and Beer also produced the first reliable Mars maps and were instrumental (pun intended) in assigning Sinus Meridiani as the Prime Meridian on Mars. Photography was not yet available, so all maps were hand-drawn.

Mädler and Beer were also able to determine the rotation period of Mars to within 1.1 seconds. It is highly admirable that astronomers made such demanding observations with telescopes of really moderate size. Even today, refractors built many years ago are still in use for scientific research.

Photography through my 75mm (3") telescope is also possible. With today's digital cameras and technology, it's much easier to take some good pictures. Below is an image of the southern part of the Moon, taken with a handheld Samsung smartphone.

Handheld smartphone photography through a telescope held against the telescope's eyepiece is difficult, because precisely aligning the optical axes of the smartphone with that of the telescope is mostly a matter of luck. Smartphone holders which attach to a telescope and position the camera lens of a smartphone precisely in line with the telescope eyepiece are also available.

You can see that even old and relatively small telescopes are really useful for getting involved with Astronomy. One additional requirement is a sturdy tripod on which to mount the telescope. It should be included in any telescope purchasing budget. Nothing spoils the performance of telescopes more than a wobbly tripod.

Old workhorses indeed. ✸

Comet Leonard and the M3 Globular Cluster by Robert G. Lyons

C/2021 A1 Leonard and the M3 globular star cluster captured from my balcony in Kits on December 2, 2021. It was cloudy but I hung on for an hour or so and got 20 x 2 minute exposures to make this image using a William Optics Redcat 51 telescope.