

## Nomination for the 2015 Qilak Award for Astronomy Outreach and Communication

It is with great pleasure that we nominate the DDO volunteers (too numerous to list) of the Toronto Centre of the Royal Astronomical Society of Canada, as the recipient of the 2015 Qilak Award for Astronomy Outreach and Communication.

These volunteers have spent the last five and a half years ensuring that the David Dunlap Observatory in Richmond Hill, Ontario continues to function – indeed, to thrive - despite all odds.

Today, the David Dunlap Observatory offers a rich variety of public outreach and education programs to school groups, Scouts and Guides as well as the general public. These programs, run entirely by Toronto Centre’s DDO volunteers, require more than 2500 person-hours per season. In addition, many more thousands of volunteer hours are dedicated to the ongoing maintenance of the Great Telescope and its precinct.

The dedication of Toronto Centre’s DDO volunteers has produced impressive results. Since assuming stewardship of the facility in 2009, the RASC Toronto Centre has welcomed more than 20,000 visitors, introducing new generations to astronomy and encouraging young people to pursue careers in the sciences.



### History

The Observatory Campus, which includes the Observatory, its 1.88 metre Grubb-Parsons optical telescope and a 5000 sq. metre administration building, was part of a 76 hectare property donated to the University of Toronto by Jessie Donald Dunlap that opened in 1935. The site of several key astronomical discoveries, including confirmation of the existence of black holes, the Dunlap property eventually fell victim to encroaching light pollution and was sold by the university in 2008. Equipment, furniture and books were removed and the buildings stood empty. The Great Telescope was exercised



weekly by the facility's long-time operations manager but was otherwise untouched. Astronomical research had moved on to facilities with darker, more reliably clear skies.

At that point, the Dunlap's fate appeared bleak. While many decried the loss of this piece of Canada's astronomical history, no government or agency was willing to step forward to assume responsibility for managing the facility. RASC Toronto Centre, with donations from RASC members across the country, commissioned the Lord Report, which offered various suggestions for adaptive reuse of the buildings. However, it still didn't answer the question of who would take on the task of running the facility.

In the spring of 2009, the owners of the property announced they were seeking an astronomy organization to operate the Great Telescope. In response, members of the Toronto Centre met with the property owners. They proposed that RASC TC provide a range of public outreach opportunities and the expertise to assume stewardship of the largest optical telescope in Canada. Their proposal, based on a model of community service and volunteer commitment, was accepted and in April 2009 – on International Astronomy Day – the agreement was announced.

Since then, as the facilities at the David Dunlap Observatory have been expanded and improved, the DDO volunteers of RASC Toronto Centre have been offering an ever-increasing range of public and educational outreach programs.

## Public Outreach

### Special Events

In 2009, RASC Toronto Centre welcomed 300 members of the public to the DDO for the Perseid Meteor Shower. In 2010, that number swelled to 2,000 visitors. RASC Toronto Centre's DDO volunteers continue to welcome members of the public for special moments ranging from aurora viewing to meteor showers to the 2012 Transit of Venus. Volunteers focus on delighting visitors with views of the night sky and increasing their understanding of astronomy. Many visitors who have come out on a whim return for additional programs and eventually join the Centre as members themselves.



Outreach activity at the DDO prompted a Toronto-based magazine, "Collections," (<http://ddn.digipage.net/?userpath=0000076%2F00011906%2F00085055%2F>) to include an article promoting astronomy as a family activity. The article was authored by RASC TC's DDO volunteers and included astrophotography by club members. It was delivered to 40,000 homes across the Greater Toronto Area.

RASC Toronto Centre, through the David Dunlap Observatory, engages in public outreach on a broader level as well. The Observatory is a magnet for journalists putting together astronomy or space-related stories. Toronto Centre members have provided educational and inspirational interviews from the site for national, regional and local reporters. It's an important opportunity to promote astronomy and to 'set the record straight' when journalists are struggling with misinformation from a variety of non-science sources.



## Star Talks

Toronto Centre provides well over 100 public outreach opportunities each year – half of them at the Dunlap Observatory.

The facility has become a public outreach laboratory; a place to test new, exciting ways of connecting with the public. Those connections may be as formal as a lecture on the lives of stars, or as informal as inviting a six year old to design her ideal spaceship.

Star Talk nights are one example of the outreach programs that RASC Toronto Centre's DDO volunteers have run since assuming stewardship of the DDO in 2009.



Guest speakers have included:

- Dr. Sara Seager – MIT
- Dr. John Percy – University of Toronto
- Dr. Michael Reid – Dunlap Institute
- Michael Lennick – Foolish Earthling Productions
- Randy Attwood – Royal Astronomical Society of Canada
- Rachel Ward-Maxwell – McMaster University
- Chris Vaughan – Controlled Geophysics Inc.
- Sara Poirier – Ontario Science Centre
- Dr. Michael De Robertis – York University
- Dr. Rachel Friesen, Dunlap Institute
- Kerry-Ann Lecky Hepburn – The Weather Network
- Paul Delaney – York University
- Dr. Roberto Abraham – University of Toronto
- Dr. Doug Welch – McMaster University
- Dr. Rupinder Brar – University of Ontario Institute of Technology
- Dr. Anne-Marie Weijmans – Dunlap Institute
- Dr. Patrick Hall – York University
- Erin Mentuch – University of Toronto
- Mike Hiltz – MacDonald, Dettwiler & Associates - Canadarm
- Dr. Rene Breton – University of Toronto
- Elizabeth Harper-Clark – University of Toronto
- Dr. Chris Matzner – University of Toronto
- Jozef Winter & Dave Kobayashi – independent engineers
- Paul Mortfield – RASC, Toronto Centre
- Wayne Parker – “Glass Tiger”, SkyShed Observatories

Guest speakers are carefully chosen for their ability to communicate complex ideas to a general audience. The result is a compelling presentation that guest speakers deliver twice over the course of the evening, to two audiences of roughly 60 people each. The Star Talk series has become so successful that each speaker night sells out, usually weeks in advance. However, experience has taught Toronto Centre that the interests of a general audience rarely coincide with the interests of a five year old. Parents are eager to expose their children to astronomy and encourage them to look beyond the latest Toys R Us fad. However, bringing youngsters to the Star Talks tended to prompt even the most space-crazed youngster to run amok. Toronto Centre’s DDO volunteer cadre came to realize another answer was needed. That answer was Family Nights.



## Family Nights



Volunteers at the DDO now offer Friday Family Nights that are tailored to the needs and interests of parents with young children.

A 'Space Crafts' room has been set up in one of the Administration Building classrooms, where arts and crafts supplies and creative DDO volunteers encourage youngsters to create their own constellation, build an alien (or become one) and learn about space through hands-on activities. The range of craft supplies and themes change frequently to accommodate the DDO's many repeat visitors.

Family Nights include the craft room, a visit to the Great Telescope and time in the newly-launched Skylab, which offers an introduction to the night sky no matter how overcast the weather.

Skylab was created out of a large, somewhat battered office. Volunteers painted the walls *projection screen white*, installed carpeting and sewed large pillows to lounge on. They then installed a twinned pair of projectors and a computer and audio system, allowing them to project "Stellarium" or any space-based programming across a seven metre expanse of wall, creating an immersive educational experience. A team of RASC TC DDO volunteers has been trained to operate the system and deliver a range of age-appropriate outreach programs. Skylab has been one of the most popular innovations on the site.



### Scouts and Guides

Toronto Centre members, trained in the requirements for Scouts, Cubs, Guides and Brownies to earn their Astronomy badge, run regular outreach programs at the Dunlap Observatory. It may be the thrill of looking through the biggest telescope in the country, but the children seem to thrive in the winter chill of the unheated Observatory.



### School Groups

RASC TC's DDO volunteers, working with local science teachers, have developed curriculum-appropriate programs to meet the needs of visiting school groups. Many of the Centre's members are educators and have volunteered countless hours to develop and deliver programs focused on solar astronomy and space weather. This work was recognized with a grant from TD Securities Underwriting Hope Charity to provide astronomy field trips to students from economically-disadvantaged areas.



### High School Students

In Ontario, high school students are required to complete 40 hours of community service before graduation. Because of its charitable status, the DDO volunteer program is able to offer student internships, involving several dozen students each season. Most of these student volunteers, who are trained to use telescopes and interact with the public, choose to continue at the DDO long after their requirements are met. Several have returned to their schools and started their own astronomy clubs.

## Telescope Clinic

The Dunlap Observatory has also been the site of outreach activities for non-RASC members who have suddenly found themselves the proud (but confused) owners of new telescopes.

RASC Toronto Centre's DDO volunteers have held successful clinics for new telescope owners. Members of the public have learned about collimation, finder alignment, polar alignment and much more. Knowledgeable volunteers walk attendees through the process of setting up and running their equipment and are happy to answer any and all questions.

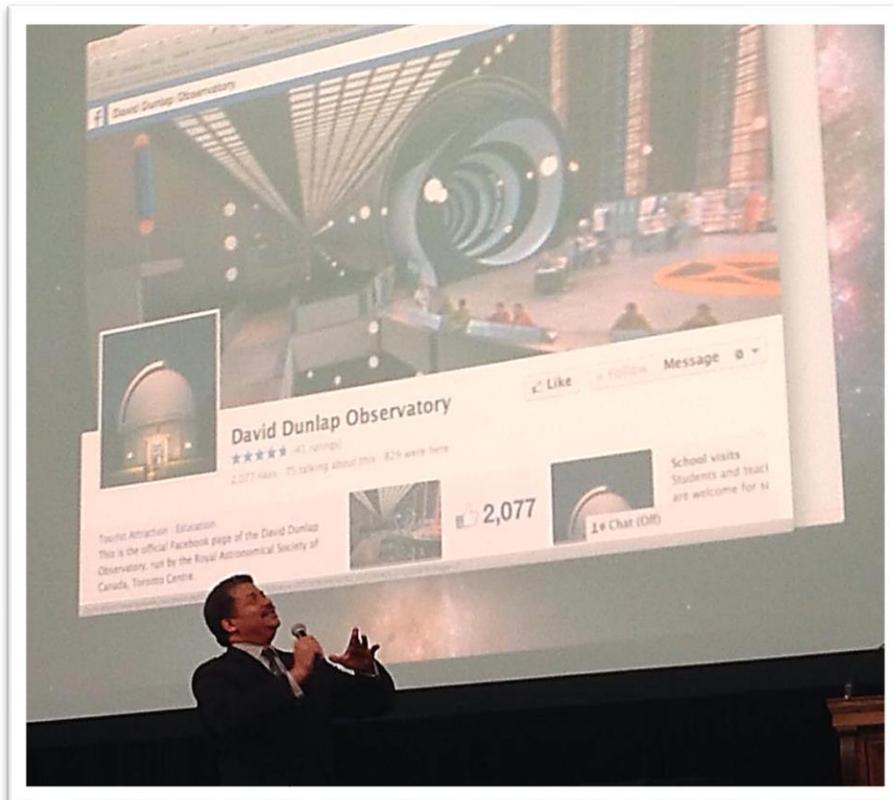
Members take a one-on-one approach with attendees, ensuring that everyone who comes to learn – leaves with the knowledge required to successfully enjoy backyard stargazing.

The free public event attracts many enthusiastic attendees and potential members.



## Social Media

The RASC TC's DDO volunteers have embraced social media as an important way of providing public education and outreach in the Richmond Hill community. In fact, RASC Toronto Centre's use of social media to promote science literacy at the DDO was praised by famed scientist Neil de Grasse Tyson when he spoke at Convocation Hall in 2014.



RASC Toronto Centre's DDO volunteers use the DDO Facebook page, website ([www.theDDO.ca](http://www.theDDO.ca)) and Twitter as tools for astronomy education and outreach.



## Conclusion

RASC Toronto Centre's DDO volunteers personify the spirit of the Qilak Award. The volunteers have come together to save an integral part of Canadian astronomical history and to transform it into an education and outreach facility that inspires the public, builds science literacy in the community and encourages new RASC membership.

Where their expertise has been required, they have quickly stepped up to help. Where new skills were needed, they have worked together to build enthusiastic, talented teams that deliver memorable public outreach programs.

Members continue to work to refine best practice models in a wide variety of program activities that could be adopted by other Centres across Canada.

For their commitment to excellence and their passion for ongoing public outreach at the historic David Dunlap Observatory, we truly believe the RASC Toronto Centre's DDO volunteers (too numerous to list) would be worthy recipients of the Qilak award.

Sincerely,



Paul Mortfield,  
President, RASC Toronto Centre



Steve McKinney,  
1<sup>st</sup> Vice-President, RASC Toronto Centre

