EPSC Abstracts
Vol. 8, EPSC2013-834-1, 2013
European Planetary Science Congress 2013

Pro-am collaborations with the Faulkes Telescopes, and the benefit to education, science and outreach awareness

N. Howes (1,2), R. Miles (2) and P. Roche (3)

(1) Faulkes Telescope Project, University of South Wales, (howesnickhowes@aol.com)
(2) British Astronomical Association, Burlington House, Piccadilly, London, UK, (rmiles@baa.u-net.com)
(3) Faulkes Telescope Project, University of South Wales, (Paul.Roche@faulkes-telescope.com)

Abstract

The Faulkes Telescope Project is an educational and research arm of the Las Cumbres Observatory Global Telescope Network (LCOGTN). It has two 2-metre robotic telescopes, located at Haleakala on Maui (FT North) and Siding Spring in Australia (FT South). It is planned for these telescopes to be complemented by a research network of multiple 1-metre telescopes, along with an educational network of multiple 0.4-metre telescopes, providing 24-hour coverage of both northern and southern hemispheres. The telescope network is unique in that it provides school students with access to research grade instrumentation in the United Kingdom and several other countries across Europe as well as in Hawaii. Over the past few years, amateur astronomers have increasingly been working with schools suggesting projects which have provided valuable scientific input to professional astronomers. This poster aims to present several of the key results and observations where professional astronomers have cited and used this data obtained with the Faulkes Telescope, notably

- Observations and results from the global campaign on Comet C/2007 Q3; Ref.[2]
- Observations of the fragmentation of Comet 168P; Ref.[3]
- Observations relating to the evolution of Comet C/2012 S1; Ref.[4]
- Observations and imaging of the Jupiter-family comet, P/2010 TO20; Ref.[5]

1. Introduction

Since their operational status commenced in 2004, the 2-metre f/10 Faulkes Telescopes have provided schools with up to 1500 hours of observing time during school hours, dedicated to education and public outreach. The key remit is the engagement of school students in taking part in real scientific research projects. Increasingly, the Faulkes Telescope team has worked with high-end amateur astronomers who have developed programs to support these educational and outreach aims, primarily focusing on solar system bodies. With the ability to run themed observing sessions lasting several hours, observations of cometary bodies and asteroids have been possible, where the outcome has been to provide professional astronomers and the schools with sufficient data to enable calculations of body rotation rates, detailed views of coma morphologies, and tail structures, and when observations are scheduled with schools over longer periods, to monitor bodies for anomalous behaviour such as outbursts, or to examine the evolution of the coma/dust output, Ref.[1]. In working with schools, on specific targeted projects, public awareness of the Faulkes Telescopes has increased significantly via press coverage, and we aim to demonstrate the beneficial effects of this for students and public outreach in astronomy.

2. Figures

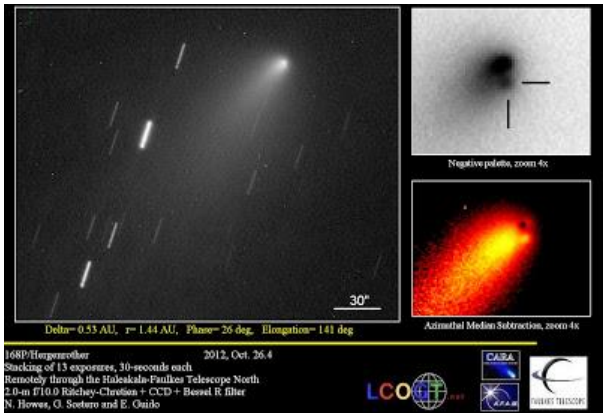

Figure 1: Observation of the fragmentation in Comet 168P.

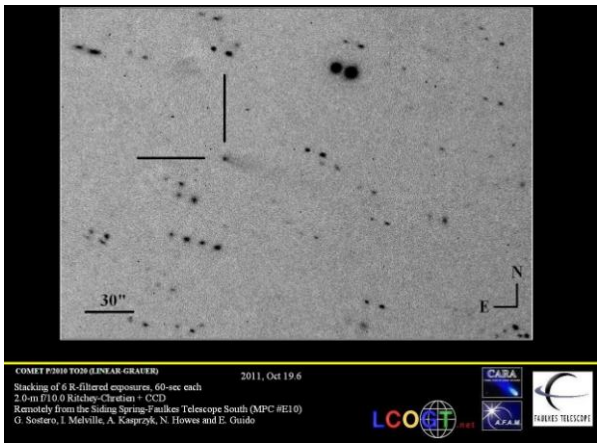

Figure 2: Observation of Comet P/2010 TO20

3. Summary and Conclusions

The Faulkes Telescopes have provided schools and colleges with valuable exposure to research-grade astronomical imaging, and an introduction to professional data reduction techniques, which standard scientific teaching methods cannot match. The student engagement and feeling of being part of real scientific research, we suggest, will nurture a desire for students to take up a career in astronomy in the future, or pursue other science-based professions. The projects which have garnered wide-scale publicity via social media, online publication and mainstream print media, have in some instances enabled schools to request additional resources and funding to teach astronomy in the classroom, and have widened the acceptance amongst the professional astronomical community that high-end amateurs and students can contribute valuable scientific data to their research.

Acknowledgements

The authors would like to thank Carl Hergenrother of the Catalina Sky Survey, Jim Scotti of the Lunar and Planetary Laboratory, University of Arizona, and Karen Meech of the Institute of Astronomy, Hawaii for their support relating to the projects cited within this submission. We would also like to thank LCOGTN for their support in access to the two Faulkes Telescopes.

References

[1] A'Hearn, M.F. et al.: Comet Bowell 1980b, Astron. J, Vol. 89, pp. 579-591, 1984.

[2] Meech K.J, A'Hearn, M.F. et.al.: EPOXI 103P/Hartley 2 observations from a worldwide campaign, Astrophys. J. Lett., Vol. 734, pp. L1-L19, 2011.

[3] Howes, N., Sostero, G. and Guido, E.: Splitting event in comet 168P/Hergenrother, Website [Access ref. 2013-5-06] http://remanzacco.blogspot.co.uk/2012/10/splitting-event-in-comet.html

[4] Sungrazing Comets: The NASA Comet ISON Observing Campaign, Website [Access ref. 2013-5-06] http://sungrazer.nrl.navy.mil/index.php?p=ison

[5] Lacerda, P.: Comet P/2010 TO20 LINEAR-Grauer as a mini-29P/SW1, Mon. Not. Roy. Astron. Soc., Vol. 428, pp. 1818-1826, 2012.