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# Newsletter Name

**The Newsletter of the Tiverton and Mid Devon Astronomical Society**

Volume 1 Issue 1

September 2014

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Welcome to the first edition of the Tiverton and Mid Devon Astronomical Society Newsletter.....Your Newsletter.

For a while now I have thought that it would be nice for members to have a means to communicate and showcase what they have been up to, what interests them, what projects they are working on, any new equipment they may have purchased, etc.

With this in mind, an approach was made to the Committee to ask for approval to produce this Newsletter, which they gave and has resulted in the document in front of you now. It is hoped that with enough contributions from members we will be able to produce the Newsletter on a Bi-Monthly basis; but to start with this may turn out to be a little more random. It will be distributed via e-mail as a PDF file to avoid printing costs and picture reproduction issues.

First things first. We need a name for our Newsletter. We would like suggestions, please, preferable short, snappy and of an Astronomical nature. The Best suggestion will not only have the honour of winning and having the Newsletter use the name but will receive a small prize. So get thinking and submit your suggestions to either of the editors. The winning name will be a majority vote by the Committee. The winning name will be fully owned by TAMDAS and the Committee's decision will be final. In the event of a tie, the casting vote will be made by choosing a random society member who has not submitted a name.

## Editors Comment:

Welcome to this first edition of the Newsletter. Although this first addition mainly has articles by us, your editors, it is hoped that more members will submit items for inclusion in future issues.

### About us:

My name is Keston Brill. I have been seriously interested in astronomy for 36 years now, although I have clear recollections of things in the sky from much earlier times. I started with Binoculars and progressing through small refractors and onto an 8" LX200, using pencil and paper to record my observations. I have now started to image the sky with DSLR's and CCD cameras and now seem to have a variety of telescopes.

My name is Pete Richardson. I've had a keen interest in Astronomy and related subjects since childhood, sparked mainly by my father who also had a keen interest in the wonders of space. My main area of interest is Astro-imaging and around three years ago I built my own observatory to pursue my passion for imaging the heavens. The observatory houses a Meade 12" LX200ACF Schmidt-Cassegrain telescope and a William Optics 80mm Refractor. In conjunction with these telescopes I use cooled CCD cameras and various other equipment!!



The Sun Imaged on 2014  
Jan 11<sup>th</sup> using a William  
Optics Megrez 90 and  
Canon DSLR.  
Taken By: Keston Brill

## Chairwoman's Column:

### THOUGHTS FROM THE CHAIR

Hi Everyone

Welcome to the first TAMDAS electronic newsletter. I am sure you will find it very interesting and informative. Big thanks to Keston and Pete for their initiative in making this happen. Maybe you have something to contribute to future editions? I am really looking forward to my first year in "The Chair." I have been a member of the Society for 17 years and on the Committee since its inception in 1999. I was Secretary for 10 years, Treasurer last year and have now returned to my long standing job of Programme Co-ordinator, this time though, with some great contributions from other members. I have also organised and supported many Society events and secured us a Lottery Grant. So, hopefully, I am in a good position to continue building on all the great work that Douglas and the Committee have done for many years.

Over the coming months the Committee intend to create a questionnaire to canvass Members' views which will help shape the future of our Society. Nick has been working on some changes to our website which will soon include a Facebook page where posts of up to date news and information can be added. Also our new Events Co-ordinator, Jo, will keep us informed of Society and local events you may wish to attend. Please remember to use the website to keep abreast of all the latest happenings with the Society including observing sessions.

On 8th August our 2014/15 season got off to a sizzling start thanks to Paul who hosted our Annual Starbeque. Despite cloudy weather conditions it was a great night enjoyed by 18 members. On 5<sup>th</sup> September we all can look forward to a thought provoking talk about "Dark Matter and Dark Energy" by Professor David McMullan of Plymouth University. On October 3<sup>rd</sup> don't miss the very engaging Professor Peter Vukisic from Exeter University who will talk about "Evolutionary Light and Colour."

Your TAMDAS Committee need help to find a logo for the Society. Therefore, we are running a competition open to Society Members and local school children. You may enter as many times as you like but, for printing purposes, all logos should be no larger than 5cm square and black and white.

Please submit your entry by midnight on Friday 21st November 2014 via email to me at [angelancousins@hotmail.co.uk](mailto:angelancousins@hotmail.co.uk). Don't forget to include your name and address. The winner will receive a prize of a £20 voucher for a store of their choice. The winning logo will be decided by the Members who can vote on any entries at the Christmas party or online and the winner will be announced at the January 2015 meeting. The winning logo will be fully owned by TAMDAS and the Committee's decision will be final. I look forward to receiving your designs. Finally, I am afraid it is that time of year again when we have to gently remind everyone that membership fees for 2014/15 are now due and should be paid to our new Membership Secretary Melvyn. If you would prefer, fees can be paid annually by standing order which you can set up with our Treasurer, David. I should also remind you that the fee is great value for money! I look forward to seeing you soon and enjoying another great year of astronomy together.

Wishing you clear skies.  
Angela



With the Winter Constellations just round the corner and the promise of darker nights, M45, the Seven Sisters, are now appearing in the East around midnight to welcome the new observing session.

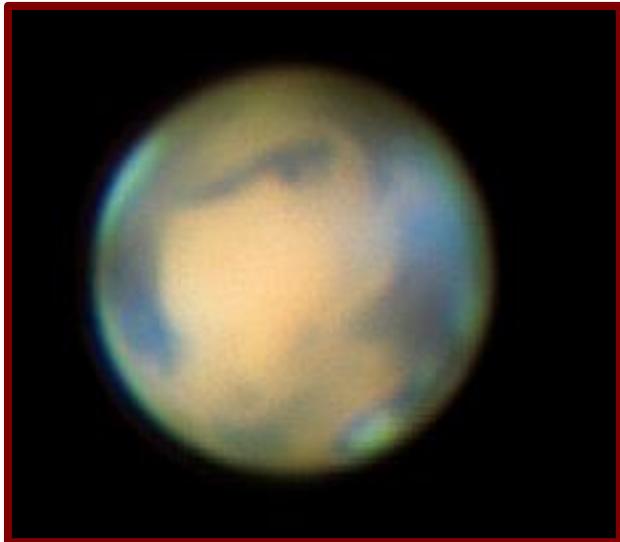
DSLR image 4x5min Stacked

## Members Section:

Mars was very prominent this spring, all be it rather low and Saturn has been well placed all Summer, even lower in the sky. Despite the poor altitudes of these two planets a number of excellent images were captured by members. Presented below are a selection.

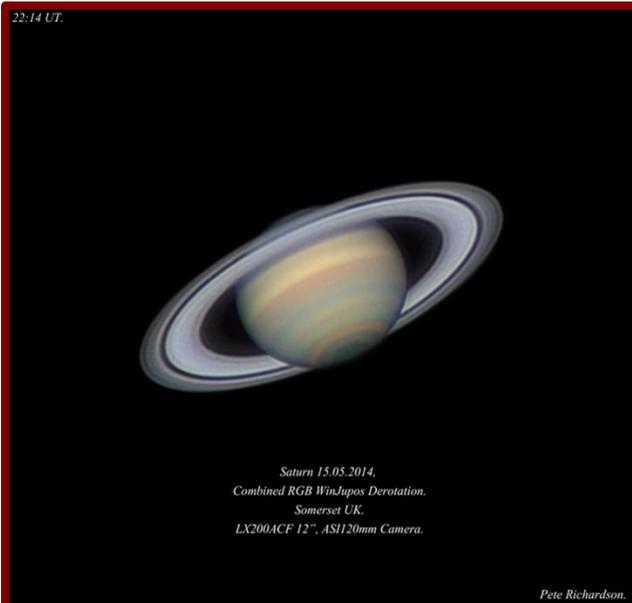
### Mars

2014 Mar 18 - 22:56 UT  
8" LX200-ASI120MM-RRGB  
Taken by: Keston Brill



### Saturn

2014 May 15 - 22:14 UT  
12" LX200ACF -  
ASI120MM-RGB  
Taken by: Pete  
Richardson.



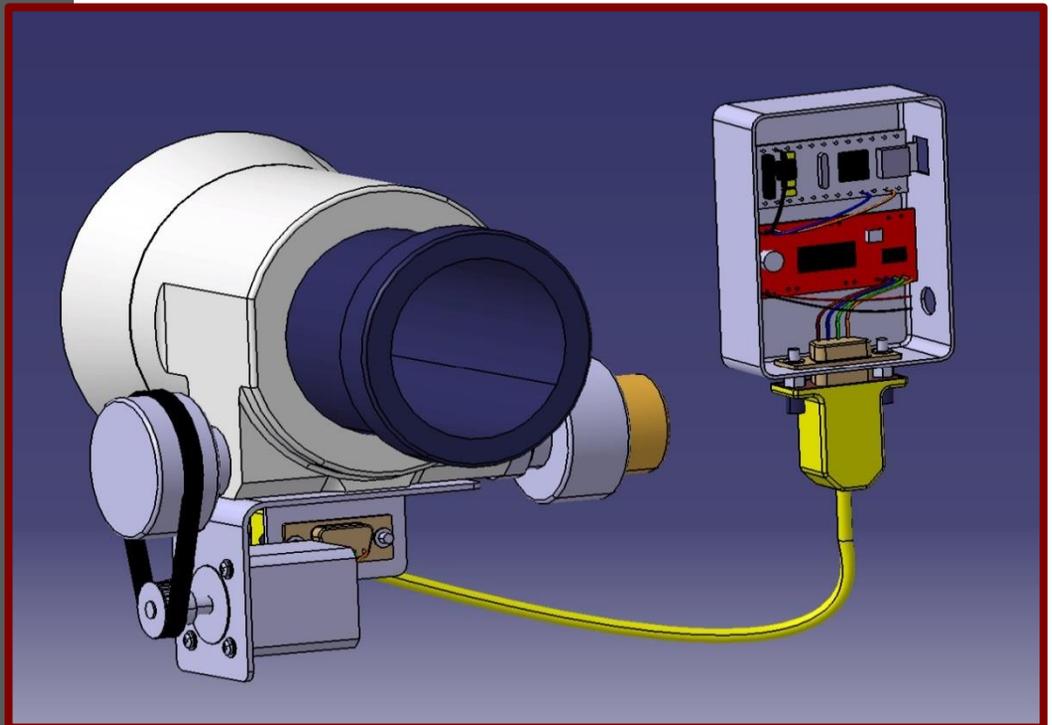
### Motorised Focuser Project.

For astro-imaging it is desirable to be able to focus your telescope without touching it and introducing vibrations. Although commercially available solutions, such as from JMI and Lakeside, are available for most telescopes these tend to be quite expensive, (£250-300+), for what is basically a stepper motor and a control circuit.

With this in mind I decided to try and produce my own solution. A quick look around the internet produced a wealth of information and in particular I found the SGL Website which give information on how to connect the Stepper Motor to an Arduino Microprocessor board to enable you to control it via computer. Much better than my initial thought of just sending electrical pulses to a motor. After some measuring up I designed my solution on a CAD system, fig 1, and acquired the various bits I didn't already have, mostly from E-Bay:

Arduino Nano Board  
Easy Driver Stepper board  
Stepper Motor  
Small Project box

Fig. 1  
CAD  
Design  
Solution



I produced a flat pattern for the mounting bracket and subsequently bent it up and attached the Motor and a connector. The two circuit boards were mounted into the project box and all the relevant pins connected up with some wire and a little soldering, Fig. 2 and 3.

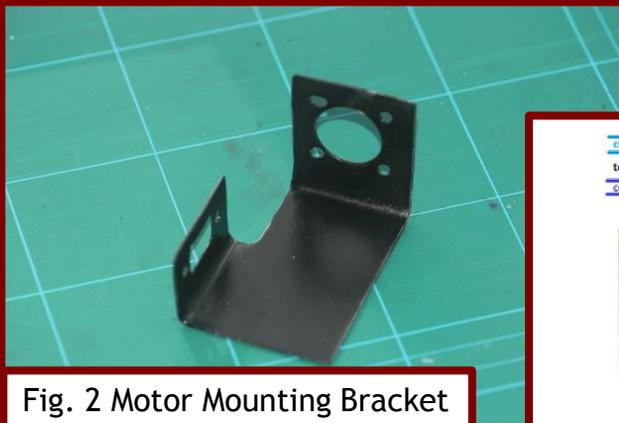


Fig. 2 Motor Mounting Bracket

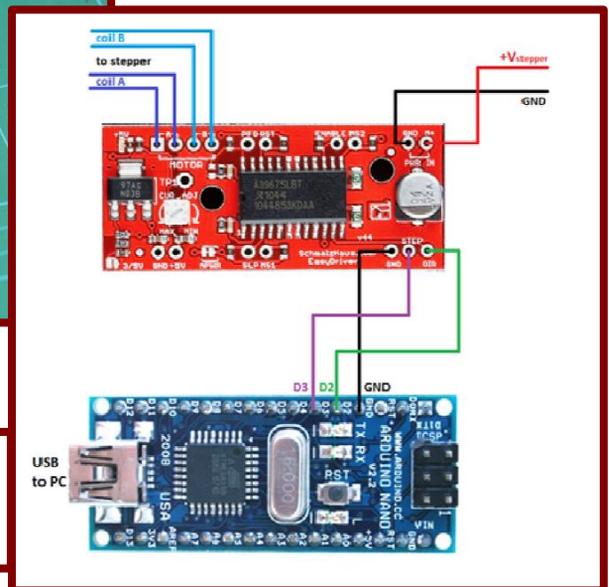


Fig. 3 Circuit Boards and Connections

At this stage it is easier to go to the SGL Website and download the ASCOM compliant driver software and upload it to the Arduino Board.

(<http://stargazerslounge.com/diy-astronomer/106144-arduino-focus-control-cloud-sensor.html>).

This allows you to control your DIY motor focuser via the ASCOM standard or via a stand-alone Windows application.

The software is open source and as such is easily modifiable to add your own specific features but for the time being I am using it as is. Once programmed it is just a matter of connecting the Arduino Board to a computer via a USB lead, telling your chosen control program that you have an ASCOM compliant focuser and away you go...vibration free focusing.

After a successful bench test it was time to attach the whole assembly to my William Optics Refractor and test it again in the field, Fig. 4.



Fig. 4

The whole project was completed at a fraction of the cost of an 'off the shelf' system, approx. £45, and works very well. Future upgrades may include the addition of temperature compensation and if the drive belt system begins to slip, in time, a modification to replace one of the Manufactures Focus wheels with another toothed gear, similar to the drive one, could be made. I also intend to try and get the Auto Focus routine found within Maxim DL to work with it.

Parting Image



NGC7380 - The Wizard Nebula  
2014 June 29  
12" LX200ACF - QSI 683 - HaOIIISII  
Taken by: Pete Richardson.

**Monthly Meetings and Forthcoming Events:**

- 5<sup>th</sup> September 2014  
Dark Matter and Dark Energy - Prof David McMullan
- 3<sup>rd</sup> October 2014  
Evolutionary Light and Colour - Prof Peter Vukusic
- 7<sup>th</sup> November 2014  
The Sky is not the Limit - Steve Bennett

Reminder: Membership Subscriptions are Due Now

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Submissions for the next newsletter to be received by no later than 30 October 2014.