

## Occultation of Saturn by the Moon at the 21th of March 2014

While in Europe the Moon and Saturn has had only a very close encounter, Observers in Namibia could see this event as a real occultation.

Due to the very great difference in brightness between Saturn and the fully illuminated limb of the moon all images are composites.

First there was recorded a avi file of Saturn (with exposure time to Saturn) and immediately after this a second avi file with correct exposure time to the moon surface brightness. Both avi files was processed in a normal way. As a last step the image of the moon was copied into the final image of Saturn. For geometrical correct position of both images details at the lunar limb was used.

### Image details of paech-03-50+03-51-100%



**Saturn:** 03:50 UT

Stacking: 300/3.000 frames

exposure time single image 1/23 second

**Moon:** 03:52 UT

Stacking: 144/1.200 frames

exposure time single frame 1/604 second

**Camera:** Celestron SkyRis 445 C

**Image size:** 100%

Software: iCAP, AviStack 1.8 and Photoshop

Note the different colors of the lava flows. Blue show Titan rich lava and red shows Titan poor lava flows. Images was taken approximately 25 minutes before the first contact.

During the complete occultation (first to second contact) we used the single frame mode of the SkyRis 445M camera and recorded exactly 1.800 single frames in 16bit tif format instead of a continuous avi file. The frame rate was about 11.5 frames per second. After the last image was stored on the laptop a short avi file – with correct exposure time to the moon surface - was recorded.

For each single phase images 60 single frames from 100 was used for stacking with RegiStax 6.1. Compositing was made as explain above.



left: 4 selected phases of the occultation,

right: all usable phases of the occultation

All images approx. 65% size of original 65%

unfortunately the seeing condition turn short before the second contact from moderate to poor, so that the image quality of the last phases are not so good as in the beginning of the occultation.

Probably these are worldwide the only images of the rare event of the Saturn occultation by moon at 21<sup>st</sup> of march 2014.

**All images and avi files taken in the prime focus of an old standard Celestron C14 using a Celestron SkyRis 445C camera and a Baader UV/IR filter**

**Image Credit: W. Paech + F. Hofmann, Onjala Observatory Namibia**