

Name of research institute or organization:

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**Walter Bersinger, amateur filmmaker**

Title of project:

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«In the Brightness of the Night» (In der Helle der Nacht)

Project leader and team:

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Walter Bersinger, amateur filmmaker  
Heinz Rauch, assistant and documentation photography

Project description:

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*Introduction*

Inspired by the cinema film *Baraka* (1992) I pursued plans to make a private film featuring shots like Ron Fricke's magnificent nightly views of the starry night sky moving over American National Park scenery. I was absolutely stunned by Fricke's time-lapse shots of ancient cultural monuments and archaeological sites such as Angkor Wat in Cambodia and Luxor in Egypt with the play of light and shadow cast by the shine of the moon and with the stars and clouds dashing across the night sky.

*The first project in the 1990s*

Since my early youth I have been a keen amateur filmer. After seeing *Baraka* I planned a private amateur film project entitled *In the Brightness of the Night* («*In der Helle der Nacht*»). I decided to modify my Beaulieu R16 movie camera so it could take time exposures. For that purpose I diverted the sound synchronization connector from its intended use. I attached a self-made crank to this mechanical interface and removed the camera's power supply. Upon pressing the camera trigger, the mechanism was released and could be operated manually via the crank, frame by frame. Each single frame had to be exposed in manual camera mode by turning the crank once every 30 seconds, making for an exposure time of about 29 seconds (30 seconds minus about 1 second for the transport of the film to the next frame). Lacking the skills to design and build programmable electronic and mechanical devices, I was restricted to manual operation of the camera, which involved looking at my wrist watch and turning the crank by hand every half minute!

During the years 1995 to 2001 I thus exposed about 18'000 single frames (about 70 scenes). Barely 11'000 of the frames were eventually used in the final seven-minute work. The film contains shots of moonlit landscapes, polar lights, the comets Hyakutake 1996 and Hale-Bopp 1997, the total lunar eclipse of 27 September 1996, lightning, and all kinds of other nightly light phenomena.

Because I saw now bright future for the chemical film imaging, I sold my 16-mm camera equipment in 2001 and hurriedly and somewhat half-heartedly finished the film. Realizing that digital imaging improved in quality rapidly and became more affordable over the years I planned a remake of the same project at a later stage. No sound track was ever added to the 7-minute film.

*The digital era dawns*

In 2005 I bought my first digital reflex photo camera, a Canon EOS 350D, and gained experience with it. Four years later I purchased a second camera (EOS 40D) and, in April 2009, began working on the remake of a film entitled, as its predecessor described above, *In the Brightness of the Night*. Thanks to the comfortable serial exposure mode of these modern cameras the number of scenes intended to be used for the new film accumulated much faster than with the 16-mm camera during the 1990s. Within only three and a half years to date I gathered more than four times the number of single frames than for the earlier film and far more spectacular ones, too!

I intend to make the new version in the full HD format 16:9 (1920x1080px). In most cases the single frames are exposed for 25 to 30 seconds. The closing and re-opening of the shutter takes about one to two seconds, making for intervals between 26 to 32 seconds. The time lapse factor resulting from these intervals is about 650 to 800. The final film will feature the *Suite Française* for flute and harp by Swiss composer Marguerite Roesgen-Champion.

Until August 2012 more than 200 video clips have piled up on my hard disk. No astronomical highlights such as the spectacular comets of the 1990s worthy or suited for time lapse filming occurred during the past few years or they were obstructed by clouds. Most of the shots taken so far cover alpine scenery by moonlight, the milky way moving over the mountain skylines, the starry night sky mirrored in an idyllic mountain lake, impressive cloud formations lit by the moon, seas of fog that look like rapid rivers, lightning, moonrises and moonsets, airport landings and takeoffs and a great deal more. The most intriguing effects are produced by the shadows in mountainous scenery cast by the full or nearly full moon. Especially moonsets create shadows lengthening at increasing speed, plunge the nightly scenery in yellowish and orange hues and eventually reveal an abundance of stars. Moonrises create the same effects in the reverse order.

### *Jungfrauoch*

In secret I have long dreamed of taking shots from the Jungfrauoch and the magnificent views of the alpine scenery and the Aletsch Glacier. However, knowing that there are no lodging facilities available for the public, I had to give up this idea. Luck turned my way when I visited Jungfrauoch with friends in September 2011 and enjoyed a guided tour of the High Altitude Research Station. Upon my inquiry about spending two or three nights in the living quarters of the research station, the custodians referred me to the foundation which generously granted me permission.

In the two nights of 27th and 28th August 2012 my dream came true. My friend and assistant, Heinz Rauch, and myself set up the two digital reflex cameras Canon EOS 350D and 40D on the Sphinx terrace. With only scattered clouds gracefully embellishing my planned time-lapse shots the weather proved perfect for our purpose.





We mounted the 40D on an old astronomical tracking device Vixen SP6 on a photo tripod. The custodian couple Joan and Martin Fischer showed to be very helpful. As Joan expressed concerns about gusty winds, we fixed the tripod with three lead blocks. The camera with the 10-mm wide-angle lens attached to it was intended to capture the Moench with the Sphinx dome in the foreground and to slowly pan over to the Trugberg and Aletsch Glacier (see collage next page a-d). The settings applied were ISO speed 400, aperture at the zoom lens' maximum F/3.5, the maximum exposure time the camera could handle on a self-controlled basis of 30 seconds and white balance preset 'daylight'. The second camera, the EOS 350D, was mounted on a sturdy camera clamp and fixed to the railing of the terrace. With the 28-mm fix focus lens I aimed it at the Aletsch Glacier, the Dreieckhorn and the Aletschhorn. As the moon descended towards the western horizon, the shadows of the mountain range west of the glacier lengthened and crept up the slopes of the mountains in the East of the glacier. Settings applied to the EOS 350D: ISO speed 200, aperture F/2.5, 30 seconds and white balance preset 'daylight'. We triggered both cameras around 2200 hrs or shortly afterwards and then simply enjoyed the majestic scenery gleaming mysteriously in the shine of the nearly full moon. We deemed it a unique privilege to have the whole Sphinx all to ourselves and felt overwhelmed by the beauty of the views and the complete silence up here!

While the cameras were clicking we returned to the living quarters around 2300 hrs and took a late evening snack. Shortly after midnight we went up to the terrace again to check if the cameras were working alright. Heinz proved an invaluable help when I had to change



the accumulators of the panning camera EOS 40D. In order to keep the time leap in the image sequence to a minimum, the power supply change had to be performed very quickly. I then stopped the EOS 350D, removed the camera and fixed it to the railings in the north. I

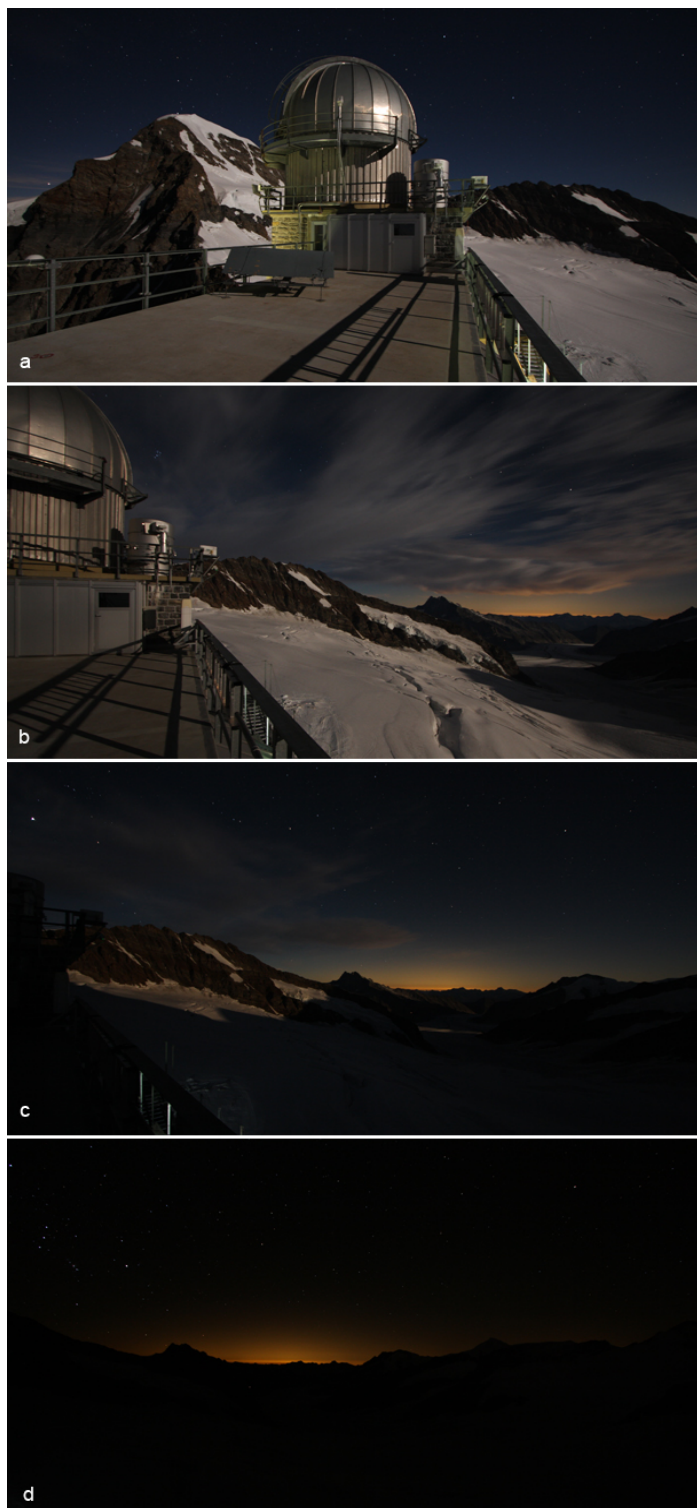


pointed it to the Moench on the slope of which was already clearly visible the shadow of the double peak of the Jungfrau (including that of the Wengen Jungfrau) slowly rising as the moon got ready to set below the western horizon. At 0118 hrs I triggered the camera and we went to sleep for about three hours. By 4 o'clock when we returned to the Sphinx terrace, the moon had long set (0306 hrs) and the absence of its shine revealed an absolutely breathtaking starry night sky with the milky way. Only the deplorable light pollution of the city of Milan and the Po plain in 150 km distance loomed over the south-eastern horizon. We stopped both cameras and went to sleep again.

The next morning I copied the frames to my notebook and converted them to video clips. We were very delighted about all three of the scenes and satisfied that all worked well technically.

The next day clouds increased and at times it even snowed during the day! Different weather services provided rather contradictory forecasts for the second night. When we stepped onto the Sphinx terrace at 2130 hrs our head lights cast a light cone into thick fog! At first we said to each other: «That was it»! Reluctant to give in, though, we hung on for a while, put off our lights and, indeed, after a couple of minutes we believed to spot a somewhat darker area above our heads. Before long, a tiny speck of the Aletsch Glacier became visible and Arcturus shone through a gap in the fog. Instantly, I came up with the flash idea of taking time-lapse shots of the likely process of the fog lifting and revealing the grand scenery later on. Although I lost no time to install my cameras, the fog lifted faster than desired! I fixed the EOS 40D with the 10-mm Sigma fisheye lens on the camera clamp to the railing in the south-western corner and placed it in a presumed position that would frame the Aletsch Glacier on the left and the Jungfrau on the right, at this time both still enshrouded in thick fog. Camera settings:

ISO 160, F/2.8, 30 sec. At 2150 hrs I triggered this camera with high hopes and then turned



my attention to the second camera. To the North large patches of clear skies had meanwhile become visible including the seas of light of the cities of Thun, Bern and Interlaken. I mounted the EOS 350D with the 10-mm zoom lens on the tripod and aimed it to the NNW to frame these city lights and the slope of the Moench. Camera settings: ISO 200, F/3.5, 30 sec. At 2200 hrs I set the camera to work and Heinz and I retreated to the heated lab rooms of the research station. Every now and then we went out to check the weather situation and the cameras and discovered that the fog lifted and returned in rapid succession. Wafts of mist curled in air currents above the Jungfrau Firn in wild up and down movements and made us fear that the video scenes would turn out very hectic in appearance. Indeed, the fog enshrouded the Sphinx once or twice again and around midnight we decided to stop the cameras.

When we converted the single frames to a video the next day, the clips did not convince us. As expected, the movements of the fog appeared very fast and almost hurt one's eye. Extremely satisfied with the results of the first night, though, we drew a very positive balance of this excursion.

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Key words:

Art, astronomy, photography, time-lapse film

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Internet data bases:

*Jungfrauojoch trailer*

It is recommended to click full screen and to select the highest quality (1080p) for a sharp image and to bring out the most intense colours:

<http://www.youtube.com/watch?v=jfORumzm9Vk>

*Progress on the project can be followed on my website:*

<http://homepage.bluewin.ch/wabers/IdHdN.html>

The latest pictures are always added on the bottom of the page. There are mostly still images. However, there are a few sample videos that can be viewed on YouTube. Next to some of the still photos you will find yellow links entitled «Sample Video on YouTube».

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Scientific publications and public outreach 2012:

In the Brightness of the Night («In der Helle der Nacht») is a private non-commercial, non-scientific film project and yet to be finalized. The film of an expected running time of about 13 to 15 minutes is planned to be screened within the scope of club events such as for astronomical societies and similar.

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