

23 July 2012: The sun is burning bright, sending light and warmth to Earth. Nothing out of the ordinary. Then, suddenly, all hell breaks loose ...

A massive eruption on our home star hurls a colossal cloud of matter into space. This is the most severe solar storm in 150 years. STEREO-A, NASA's solar probe, takes a hard hit and delivers spectacular images of the event. Fortunately, the Earth is not in the path of the sun's awesome projectile, thus escaping a fate with unpredictable consequences. But it's a close call. Nine days more into its orbit around the sun and it would have been in the line of fire. It's only a matter of time before a violent solar storm hits the Earth. We must prepare for this day.

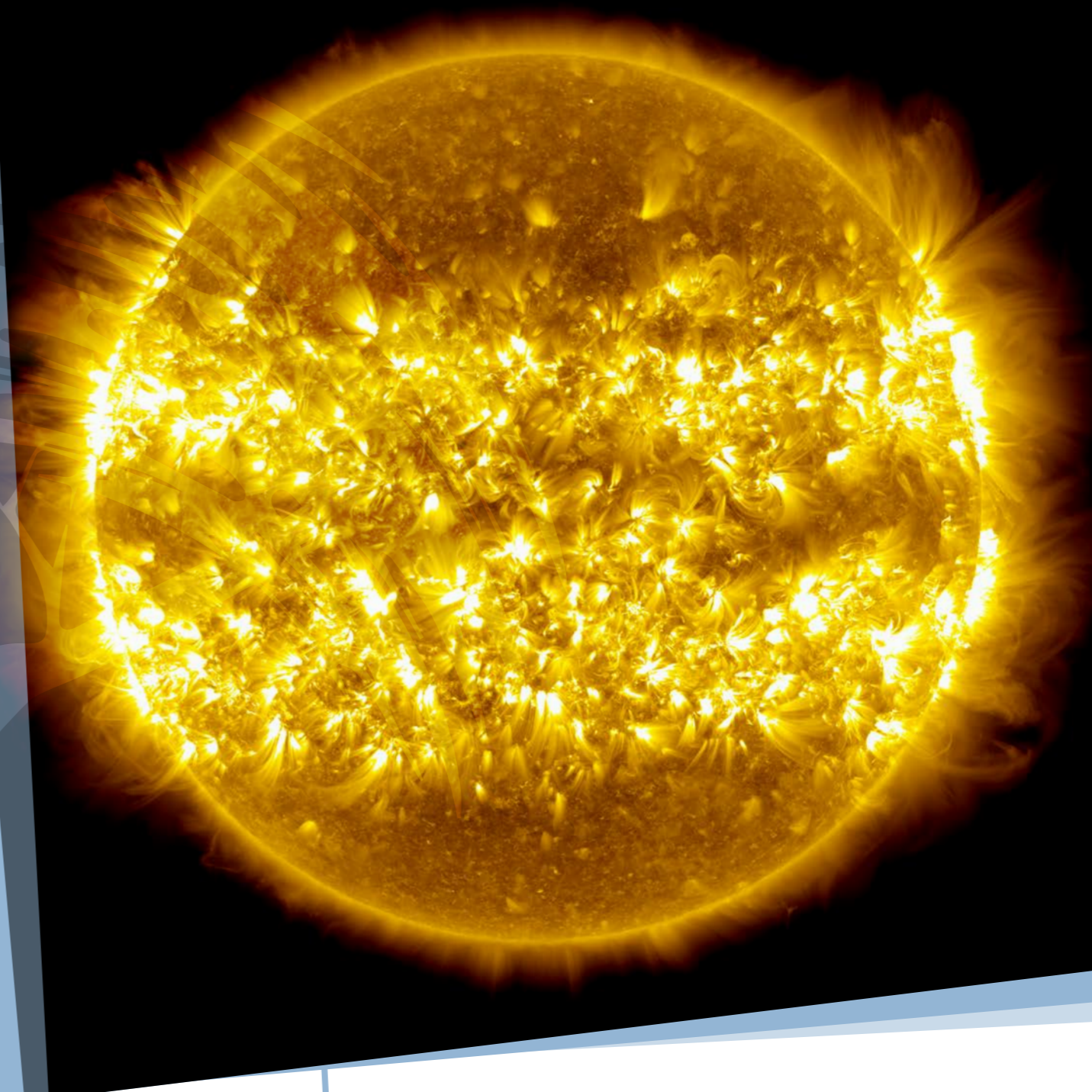
A closer look at the sun reveals that it is a constantly active, dynamic world, generating inconceivable temperatures. Boiling hot plasma is kept in check by powerful magnetic fields. But these fields are unstable and collapse time and again slinging enormous amounts of solar plasma into space in the process. When these clouds of charged matter hit the Earth, they can interfere with electrical systems and even destroy them. Previous solar storms have resulted in large-scale power outages and the total loss of satellites worth tens of millions.

Both NASA and the ESA are now carrying out new missions, like the Parker Solar Probe, due to reach its final position in 2024. It will be closer to the sun than any other spacecraft to date. Researchers back on Earth expect the probe's close-up images to deliver completely new insights into our nearest star.

When not creating solar storms, the sun's activity is still in a state of flux—not only during the usual 11-year cycle from one solar maximum to the next. Some experts have discovered that our ever-changing sun also has a major influence on the Earth's climate.

One indicator of solar activity are sunspots—darker areas of the sun's surface that are a little cooler than the other areas. They are created when magnetic field lines protrude from the sun's interior. Scientists at Austria's Kanzelhöhe Solar Observatory in Carinthia, observe and monitor the development of sunspots around the clock.

'The Sun—Inferno in the Sky', presents the latest developments in solar research and offers fresh, unexpected and even controversial insights into the work of international scientists as they delve into the mysteries of our life-giving star.



## 4K THE SUN INFERNO IN THE SKY

1 x 50 min.

Written and directed by Manfred Christ

4K, 5.1 and Stereo

Executive producers: Ivo Filatsch, Sabine Holzer



TERRA MATER  
Factual Studios

www.terramater.com

Terra Mater Factual Studios GmbH, Wambachergasse 2, 1130 Vienna/Austria,  
phone +43-1-87003-0, fax +43-1-87003-27609, office@terramater.at

SCIENCE