BOOK REVIEW

THE CORAL THIEF
By
Rebecca Stott
Phoenix Paperback
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The year is 1815 and Napoleon has started his last, long journey south. At the same time Daniel Connor, a medical student from Edinburgh, is travelling to Paris to take up the post of assistant to Cuvier at the Jardin des Plantes. He carries a letter of introduction, a mammoth tooth and three rare coral fossils as a gift. Joined on the coach by a 'dark lady' and, lulled by the journey and her tale of when the Paris Basin was under an ocean, he falls asleep. Waking, he finds the letter and specimens gone.

His pursuit of the thief takes him deep into the turbulent post Waterloo world of Paris. Here he meets émigrés in disguise, savants from the Egyptian Expedition, one of Cuvier's bone boilers, a master thief, a child 'who can slay dragons', cabinets of corals, the Satar Diamond and the Transformists, followers of Lamarck who, unlike Cuvier, believe that species can change. Over Paris, and everyone in it, hangs the shadow of Jagot, poacher turned gamekeeper, hunting down enemies of the state.

By day, as Denon at the Louvre hides the best of his and Cuvier's looted specimens, Daniel works on the bird volume of *Regne Animal*, Cuvier's masterpiece. At night in a very different Paris he is slowly transformed by heretical ideas about life's origins whilst treading a fine line between criminal activity into which he is slowly drawn, and the schemes of Jagot.

"A historical, scientific, romance-thriller? Stott has quite possible invented a new genre" *The Boston Globe.* The author has a previous non fiction book about Darwin to her name and was this year in a BBC4 programme about him.

Will Daniel find the dark lady and avoid the traps set by Jagot? Can he survive a life in Paris for which Scotland could not prepare him? Will it all end in tears? Whose ideas about transmutation will prove correct, Cuvier's or Lamarck's; or will other ideas appear about the origin of species? New readers begin here.

John Parkins

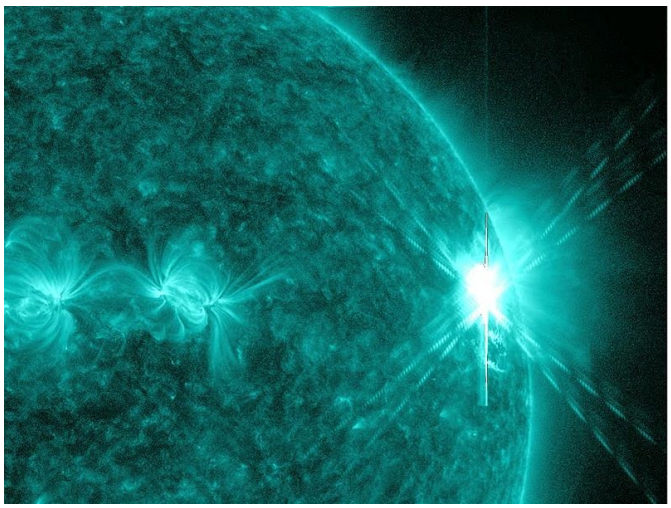
Solar Flares
By Mellissa Freeman

Solar flares eject clouds of electrons, ions and atoms from the Sun out into space. Typically, if they originate in the part of the Sun facing Earth, the clouds will reach us within a couple of days. The energy released from solar flares is massive and can be anywhere up to 6×10^{25} joules which is about a sixth of the total energy output of the Sun each second (this has been likened to the energy produced by ten billion one-megaton nuclear bombs).

Flares occur around active regions of the sun called sunspots where intense magnetic fields penetrate the Sun's surface to link the corona back to the solar interior. The sudden release of magnetic energy stored in the corona is what powers these solar flares. Although they emit radiation with wavelengths across the electromagnetic spectrum, they are not visible to the naked eye so special instruments are used to view them.

Solar activity tends to run along an 11 year cycle. Activity has started to ramp over the

last few months with many solar flares reported, of varying strengths, by NASA's Solar Dynamics Observatory. The peak for activity has been forecast for late 2013 or early 2014 with extreme flares expected every couple of months rather than years.



NASA image captured 9 Aug 2011: Earth-directed X6.9 flare, as measured by the NOAA GOES satellite.

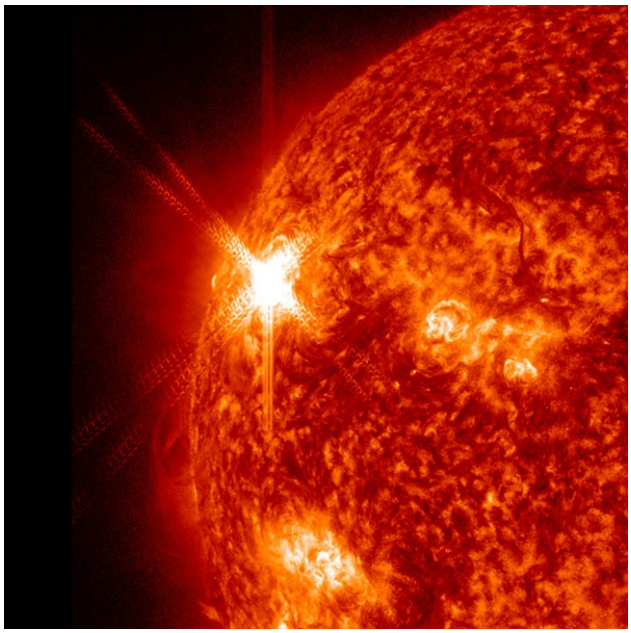
Over the last few months, at high latitudes, beautiful aurora (the aurora borealis and aurora australis) have been observed as the charged particles emitted by the flares interact with our magnetosphere. They can interfere with short-wave radio communications, the electronics on satellites, and present radiation hazards to astronauts. On the surface of the Earth, the effects of these particles can be potentially disastrous. They can interact with power lines causing an increase in heat and power surges that can blow transformers and lead to power outages.

The Solar Dynamics Observatory (SDO), launched for NASA's Living with a Star Program, is monitoring this space weather and providing data to help us understand how the Sun works. The ability to predict large solar events is becoming more relevant as we rely heavily on satellites for communication, GPS, as well as the electronics we rely on daily in our homes and businesses. Putting all this gloom and doom aside, what a fantastic time to head north and see the aurora!

For more information and some excellent photos & videos please visit NASA's SDO website:

http://sdo.gsfc.nasa.gov/mission/about.php

Also:
http://news.nationalgeographic.com/news/2011/06/110608-solar-flare-sun-science-space/
http://www.solar-storm-warning.com/
http://en.wikipedia.org/wiki/Solar_flare



NASA image captures 3 Nov 2011: X1.9 flare

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