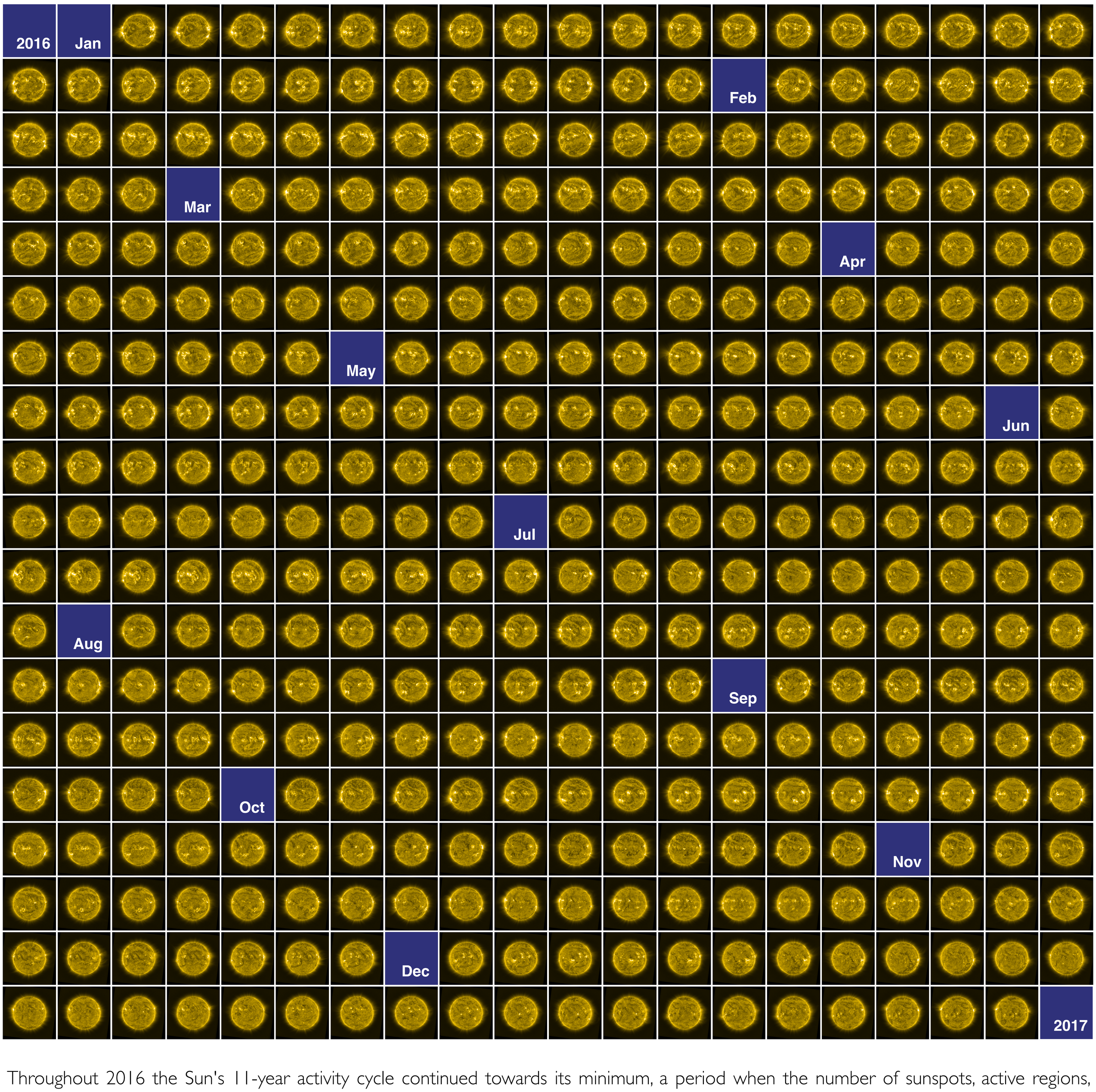
THE EVOLVING SUN THROUGHOUT 2016



Throughout 2016 the Sun's 11-year activity cycle continued towards its minimum, a period when the number of sunspots, active regions, solar flares and eruptions diminish, whereas coronal holes—regions of lower emission seen in the Sun's atmosphere—are larger and more prominent. The changing activity of the Sun was continuously monitored by SWAP—the extreme-ultraviolet imager aboard ESA's PROBA2 satellite—, which is represented in the series of images above, where one image was selected from each day of the mission during 2016.

Active regions, seen as bright regions in the images above, are areas of complex magnetic activity that can produce solar eruptions and flares. The most active region of 2016 can be seen close to the centre of the Sun on July 17th. This region created 8 of the 20 most powerful flares observed in 2016, including the most energetic, an M7.6 class flare on July 23rd. Other prominent features are coronal holes, seen as regions of reduced emission. Coronal holes produce streams of fast solar wind which can cause geomagnetic storms on Earth. One of the largest holes can be seen in the North on the 24th of November. This region was observed for several solar rotations and caused recurring geomagnetic disturbances.