Come explore us Roughly every 11 years sun goes quiet period one full solar fireworks mid-February 2024 NASA ’ Solar Dynamics Observatory captured images X-class solar flare teal yellow red images show three different types extreme ultraviolet light highlight extremely hot material flares NASA/SDO Adam Mann April 8 2024 6:30 sun closest star Earth gives Earthlings especially astronomers front-row seat activities One striking features sun ’ activity astronomers call solar cycle epic rise fall sun ’ level activity repeats every 11 years Astronomers owe discovery solar cycle sunspots Ever since Galileo first pointed telescope sun 1610 people witnessed occasional emergence dark splotches sun sun rotates completing one spin every 27 days spots appear move across star ’ surface Heinrich Schwabe regularly tracked sunspots 1826 1843 German astronomer credited discovering sunspots ’ frequency tends vary every 11 years active time — maximum — 11-year cycle dozens sunspots seen slowly crossing sun time least active point solar cycle — solar minimum — star may sunspot-free years research linked sunspots solar cycle sun ’ magnetic field Much like Earth sun magnetic field North Pole South Pole sun ’ magnetic field least 100 times strong Earth ’ ’ also much larger complex Weekly updates help use Science News Explores learning environment Thank signing problem signing sun huge ball super-hot gas Temperatures within sun high electrons get ripped away cores nuclei atoms creates swarm negatively charged electrons positively charged nuclei charged particles known ions ions move around inside sun create swirling magnetic fields fields twist turn churning sun rotates Sometimes magnetic field lines come together create points extra-powerful magnetism sun ’ surface spots intense magnetism cool surrounding gas making sunspots appear overall surface sun roils roughly 5,500 degrees Celsius 10,000 degrees Fahrenheit Sunspots look dark much cooler — around 3,500 ºC 6,300 ºF