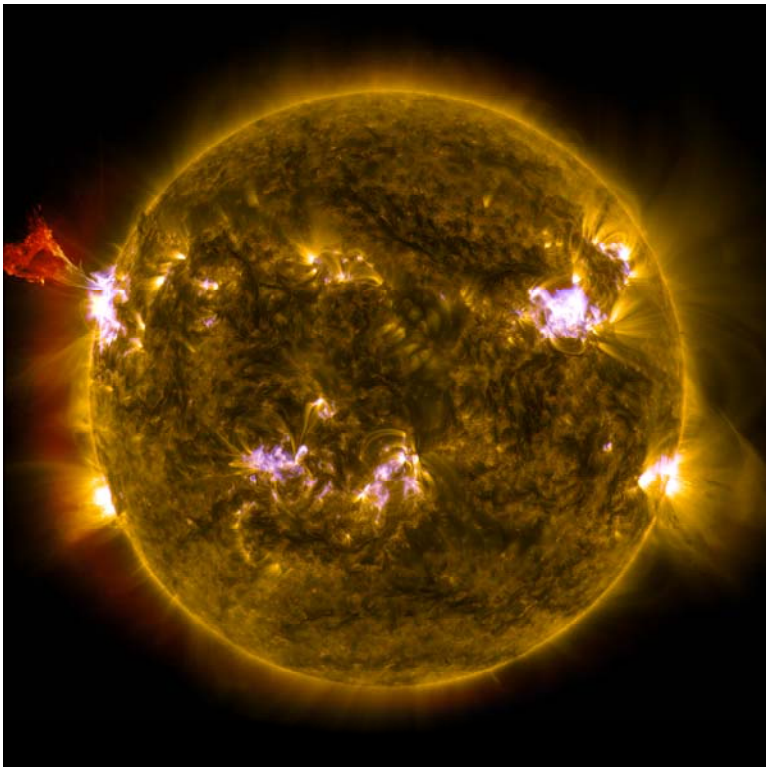

This image was obtained by the Solar Dynamics Observatory on May 3, 2013. It shows a solar flare on the edge of the sun.

There are many other active areas on the solar surface near sunspots which have a white color in this image.

The year 2013 is called the Sunspot Maximum because in this year, the sun produces more sunspots and solar storms than any other time in its 11-year cycle.

The year 2009 was called Sunspot Minimum with the fewest number of sunspots counted during each month. For each month in 2009, the average number of sunspots counted was 2, 1, 1, 1, 3, 3, 4, 0, 4, 5, 4, 11. Although sunspots have only been counted for the first 4 months of 2013, the average monthly numbers are 63, 39, 58, 72.

Problem 1 - What is the average number of sunspots counted in 2009 rounded to the nearest integer?

Problem 2 – What is the average number of sunspots counted in 2013 rounded to the nearest integer?

Problem 3 – Suppose that after adding the sunspot counts for May 2013 that the new average became 60. What was the number of sunspots counted in May rounded to the nearest integer?

Problem 4 – In July 2013, suppose that the number of sunspots counted was 5 more than the average for May. The June counts were 6 more than the counts for July, and the May counts were 5 more than the average for January, February, March and April. What were the monthly sunspot counts for May, June and July, and what was the average sunspot number for January-July?

Sun Emits Mid-Level Flare, May 3, 2013
http://www.nasa.gov/mission_pages/sunearth/news/News050313-flare.html

Additional Sunspot Data: http://www.ips.gov.au/Solar/1/6

Problem 1 - What is the average number of sunspots counted in 2009 rounded to the nearest integer?

Answer: (2+1+1+1+3+3+4+0+4+5+4+11)/12 = 39/12 = 3.25 or **3**

Problem 2 – What is the average number of sunspots counted in 2013 rounded to the nearest integer?

Answer= (63+39+58+72)/4 = **58**

Problem 3 – Suppose that after adding the sunspot counts for May 2013 that the new average became 60. What was the number of sunspots counted in May rounded to the nearest integer?

Answer: (63+39+58+72 + X)/5 = 60 then (232+X) = 5 x 60 and X = **68**.

Problem 4 – In July 2013, suppose that the number of sunspots counted was 5 more than the average for May. The June counts were 6 more than the counts for July, and the May counts were 5 more than the average for January, February, March and April. What were the monthly sunspot counts for May, June and July, and what was the average sunspot number for January-July?

Answer: In Problem 2, the average for the first four months was 58. The May counts were 5 more than this average or 58+5 = 63. The July counts were 5 more than the average for May or 63+5 = 68. The June counts were 6 more than the July counts or 68+6 = 74. So we have
January……63
February……39
March……58
April……72
May……63
June……74
July……68

The average for the first seven months is then (63+39+58+72+63+74+68)/7 = 62.4 or rounded to the nearest integer we get **62 sunspots**.