

General Features of Solar Cycle 24

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Abstract. In this study, using the data of Istanbul University Observatory, general features of Solar Cycle 24 are presented.

Keywords. Sun, Sunspot areas, Solar cycle

1. Introduction

The length of a solar cycle is about 11 years. The number of sunspot and sunspot groups on the Sun increases and decreases over time through this cycle. Solar Cycle 24 started in January 2008 after Solar Cycle 23 with an extraordinary length. Because the minimum of Solar Cycle 23 lasted a long time, the first spots of Solar Cycle 24 were at lower latitudes than normal. It is noted that the first half of the cycle has the lowest activity of the last 100 years.

2. Method-Result

In this study, Istanbul University Observatory data were used. Telescope Properties; Astrograph D=30 cm, f=150 cm and Sun telescope “Photosphere D=13 cm f=200 cm and Chromosphere D=12 cm f= 232 cm (H-alpha- Lyot Filter)” The maximum of Solar Cycle 24 was expected to be in 2013; but there was not much activity at that time. In January of 2014, a huge sunspot group was observed on the Sun. This group, which is the largest group of spots observed in Solar Cycle 24, is called “AR1944”. The largest spot in AR1944 is about 2 times larger than Earth, and the entire sunspot group is about 7 times larger than Earth. This sunspot group was also observed at the Istanbul University Observatory.

One of the biggest flares of Solar Cycle 24 was observed at the Istanbul University Observatory on 25 June, 2015. It was observed that the flare started at 10:55 and ended at 13:55, with the maximum amount of flare coverage being an area of about 20 Earths wide on the surface of the Sun.

Solar Cycle 24 has been a very weak cycle. It reached its maximum in April 2014. The extensions of Solar Cycle 24 in the northern and southern hemispheres seem to be compatible because they are seen at similar latitudes and times. Our observational results were affected because of some technical disruptions in the telescope of the Istanbul University Observatory.

References

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