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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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H-alpha solar flare classification

太阳H α 耀斑分级

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Table of Contents

- 1 Scope
- 2 Terms and definitions
- 3.2 Halpha solar flare area classification

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by the China Meteorological Administration. This standard by the National Satellite Meteorology and Space Weather Space Weather Monitoring and Warning Committee for Standardization Technical Committee (SAC/TC347/SC3) Centralized. This standard was drafted. National Satellite Meteorological Center (National Space Weather Monitoring and Warning Center). The main drafters of this standard. your music out, Zhaohai Juan, were bit country, Mao Tian, \u200b\u200bChen Po. Halpha solar flares grading

1 Scope

China's national standard for the classification of solar flares observed in the H-alpha line. It specifies the classification of H-alpha solar flares by area and by brightness, and it applies to the monitoring and forecasting of solar flares. A solar flare is defined here as a sudden localised brightening of the solar atmosphere, usually accompanied by enhanced electromagnetic radiation and particle emission; an H-alpha flare is one observed at the centre wavelength of the hydrogen alpha line at 656.28 nanometres. The H-alpha classification is one of the two systems in use for flares, and it is the older one. It describes what the flare looks like: how large an area of the solar disc brightened, and how much brighter it became. The area classes run s, 1, 2, 3 and 4, with the boundaries expressed in millionths of the solar hemisphere and given equivalently in square degrees and in square kilometres - one standard flare area unit being one millionth of the solar hemisphere, about three million square kilometres. The brightness classes describe the intensity relative to the undisturbed solar background. Together they form the familiar two-part designation in which a flare is described by an area class followed by a brightness letter. The reason the classification survives alongside the X-ray classification used for space weather alerts is that it is observational rather than instrumental: an H-alpha flare can be seen and classified from a ground telescope with a narrow-band filter, which is how the entire historical record of solar activity was built and remains the only continuous record extending back before the satellite era. Issued on 3 September 2014 and in force since 1 January 2015.

This standard specifies the solar H α flare classification. This standard applies to solar H α flares monitoring and forecasting.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1 Solar flares solarflare Local area solar atmosphere suddenly lightened active phenomena, often accompanied by enhanced electromagnetic radiation and particle emission.

2.2 H α solar flares Halphasolarflare In H α line center wavelength of a hydrogen atom of the observed solar flares. NOTE. H α line center wavelength of a hydrogen atom 656.28nm.

2.3 H α solar flare brightness Halphasolarflarebrightness H α solar flare brightness of the sun relative to the background when there is no flare.

2.4 H α solar flare area Halphasolarflarearea During solar flares, H α flare brightness maximum time observed brightness enhancement area of the region.

3.1 General The strength level indicated by the sun flares H α H α flare area and brightness.

3.2 H α solar flare area classification

3.2.1 H α solar flares by area divided into. s, 1,2,3,4 five, see Table 1.

3.2.2 In the area of the classification prevail in Table 1 A1, A1 hemisphere sun area 10⁻⁶ is a standard flare unit of area. A2, A3 in order to Sun square kilometers square degrees and the corresponding hierarchical control units.

Note. a standard flare area unit is equivalent to $3 \times 10^6 \text{ km}^2$.

48.5 square degrees of the sun flares standard unit of area = $1.467 \times 10^8 \text{ km}^2$. Accuracy

3.2.3 H α flare area should not be less than 10 units of solar hemisphere area, equivalent to $30 \times 10^6 \text{ km}^2$.