

(12) United States Patent Hoot

US 7,209,229 B2 (10) Patent No.:

(45) Date of Patent: Apr. 24, 2007

(54) WAVELENGTH SELECTABLE **SPECTROHELIOGRAPH**

John E. Hoot, San Clemente, CA (US)

Assignee: Meade Instruments Corporation,

Irvine, CA (US)

Subject to any disclaimer, the term of this (*) Notice:

patent is extended or adjusted under 35

U.S.C. 154(b) by 379 days.

Appl. No.: 10/864,134

(22)Filed: Jun. 9, 2004

Prior Publication Data (65)

US 2005/0275838 A1 Dec. 15, 2005

(51) Int. Cl. G01J 3/40 (2006.01)G01J 3/18 (2006.01)

(52)

(58)356/326, 328, 332, 334 See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

3,580,679 A	5/1971	Perkins
4,705,396 A	11/1987	Bergstroem 356/332
5,717,487 A *	2/1998	Davies 356/328

OTHER PUBLICATIONS

Hanaoka, Multi-Wavelength, High-Speed Video Spectroheliograph, Proceedings of SPIE—Innovative Telescopes and Instrumentation for Solar Astrophysics, Feb. 2003, vol. 4853, pp. 584-592.*

Philippe Rousselle, Observing the Sun with a Spectroheliograph http://astrosurf.com/Spectrohelio/index-qb.htm accessed May 25, 2004, 25 pages.

Claude Plymate, "Two-Dimensional Imaging Of The Fundamental Rotation-Vibration Carbon Monoxide Lines at 4.67 µm," University of Western Sydney, downloaded from the internet at www.noao. edu/noao/staff/plymate/docs/plymate_arp.pdf, on Jun. 16, 2005, 40

* cited by examiner

Primary Examiner—F. L. Evans (74) Attorney, Agent, or Firm-Knobbe, Martens, Olson & Bear LLP

ABSTRACT (57)

An apparatus, system and method are provided for composing an image at a selectable wavelength, wavelengths or bandwidth. Light passing through an entrance slit is dispersed into a spectrum and recorded. In an embodiment, spectral images corresponding to respective portions of an object are generated. Image data corresponding to a selected wavelength, wavelengths or bandwidth is extracted from the spectral images and compiled into an image of the object. In an embodiment, user optics are provided which allow a user to align the object with the entrance slit or to focus the light from the object onto the entrance slit.

16 Claims, 8 Drawing Sheets

