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(12) **United States Patent**
Charles

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(54) **OMNIRAMIC OPTICAL SYSTEM HAVING CENTRAL COVERAGE MEANS WHICH IS ASSOCIATED WITH A CAMERA, PROJECTOR, OR SIMILAR ARTICLE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

http://www.versacorp.com; Subject Document First Uploaded Mar., 9, 1997; Versacorp Axial Strut Omnicam Reflectors; by Jeffrey R. Charles.

(21) Appl. No.: **09/036,612**

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(22) Filed: **Mar. 7, 1998**

http://www.eclipsechaser.com; Subject Document First Uploaded Feb., 14, 1997 Techniques for Wide Angle Eclipse Photography; Jeffrey R. Charles.

Related U.S. Application Data

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(List continued on next page.)

(51) **Int. Cl.⁷** **G02B 17/00**

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(52) **U.S. Cl.** **359/725; 359/728; 359/729; 359/731**

(57) **ABSTRACT**

(58) **Field of Search** **359/726–736, 359/725**

The present invention relates to an omnicam wide angle optical system which is associated with a camera, projector, medical instrument, surveillance system, flight control system, or similar article. The optical system typically consists of a Cassegrain system having a strongly curved convex reflecting surface with a prolate aspheric figure, a secondary reflector surface, and a modular imaging and correcting lens system. The invention further relates to the distribution of still or motion picture image elements by optical or electronic means, whereby the entire image or any subset thereof is converted from a two dimensional annular image or a segment thereof to a viewable horizontal image or a segment thereof; or, from a horizontal format image or a subset thereof into an annular image or a segment thereof. The present invention also relates to the capture, integration, and display of images having three dimensional information and the capture and presentation of sound and other attributes of real or artificially generated subject matter.

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67 Claims, 34 Drawing Sheets

