

Title (en)

AUTOFOCUSSING METHOD FOR TELESCOPES PERTAINING TO SURVEYING EQUIPMENT

Title (de)

VERFAHREN ZUR AUTOFOKUSSIERUNG FÜR FERNROHRE VON VERMESSUNGSGERÄTEN

Title (fr)

PROCEDE DE MISE AU POINT AUTOMATIQUE POUR DES TELESCOPES D'APPAREILS D'ARPENTAGE

Publication

EP 1299760 A1 20030409 (DE)

Application

EP 01960486 A 20010710

Priority

- DE 10033483 A 20000710
- EP 0107931 W 20010710

Abstract (en)

[origin: DE10033483C1] The invention relates to an autofocus method, especially for telescopes pertaining to surveying equipment, said telescopes being fitted with image sensors which split the image signal into individual image elements (pixel), such as CCD lines and/or matrices and CMOS image sensors. Starting from the pixel lying closest to the optical axis, the local signal amplitude is calculated from the monotonously falling or rising signal to the next local maximum and minimum. As long as said local signal amplitude is substantially smaller than the maximum signal, and the focussing element pertaining to the telescope lens is in the focussing position for short target distances, said focussing element is displaced in large steps. The step distance is shortened according to the size of the local signal amplitude in relation to the maximum signal, and according to the position of the focussing element in the region of larger target distances. For a certain size of local signal amplitude in relation to the maximum signal, the cross-correlation functions (KKF) are formed respectively from certain pixels pertaining to the signal, and suitable comparison structures. For a particular relation between a reference function formed from the KKF, and the local signal amplitude, a step distance which is comparable with the optical depth of field is selected and focussed on the maximum of the KKF.

IPC 1-7

G02B 7/36; **G01C 1/02**

IPC 8 full level

G01C 1/02 (2006.01); **G01C 15/00** (2006.01); **G02B 7/36** (2006.01)

CPC (source: EP US)

G01C 1/02 (2013.01 - EP US); **G01C 15/002** (2013.01 - EP US); **G02B 7/36** (2013.01 - EP US)

Citation (search report)

See references of WO 0205005A1

Designated contracting state (EPC)

CH DE LI SE

DOCDB simple family (publication)

DE 10033483 C1 20020103; EP 1299760 A1 20030409; US 2003089837 A1 20030515; US 6927376 B2 20050809; WO 0205005 A1 20020117

DOCDB simple family (application)

DE 10033483 A 20000710; EP 0107931 W 20010710; EP 01960486 A 20010710; US 7058002 A 20020809