Observation of the enhancement of the infrared helium line 10830 Castron.zhur. 39 no.1:158-159 Ja-F '62. (MRA 15:2)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga. (Twilight)
(Helium—Spectra)

AM4016111

BOOK EXPLOITATION

s/

Shcheglov, Petr Vladimirovich

Electron telescopy (Elektronnaya teleskopiya) Moscow, Fizmatgiz, 63. 0194 p. illus., biblio. 4,000 copies printed.

TOPIC TAGS: electron telescopy, electron optical conversion, image amplification, electron photography, electron spectroscopym fluorescent screen, photometry, spectrophotometry

PURPOSE AND COVERAGE: The book is intended to acquaint a large circle of workers engaged in research on faint light with the present status of the use of electron optical converters and image amplifiers. It is aimed essentially at astronomic applications of electron telescopy. It deals with the application of electrontelescopic procedures to astronomy and the combined utilization of large telescopes and image amplifiers, with emphasis on the spectroscopy of the received light.

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SUB CODE: AS, SD, PG SUBMITTED: 27May63 NR REF SOV: 036

OTHER: 026 DATE ACQ: 10Dec63

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ACCESSION NR: AT3008549

\$/2984/53/000/000/0156/0158

AUTHOR: Shcheglov, P. V.

TITLE: A Fabry-Perot etalon for observations of weak emissions from heavenly bodies

SOURCE: Novaya tekhnika v astronomii; materialy*soveshch. Kordssii priborostroyen. pri Astronom. sovete AN SSSR, Moskva, 18-20 apr. 1961 g. Mosco., Izd-vo AN SSSR, 1963, 156-158

TOPIC TAGS: Fabry and Perot etalon, vacuum magnification, interferometer, spectroscopy, interference filter

ABSTRACT: Vacuum magnification of an image with fluorescent screen does not have high resolving power. The author uses contact electro-optical converters with a resolving power of 0.05 mm and a working range of 10 mm, findin; this system to be very efficient for spectroscopy. He has also used these image magnifiers in combination with interference monochromators. For the region of $H \sim the$ gain in exposure is a hundredfold, and, hence, such monochromators should be used for cutting down on cloud background when observing emission nebular. The author has used an interference filter for the $H \sim the$ line with $h \sim the$ which the Fabry-

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Perot etalon is set up, with a coating reflectivity of 70% and a separator thickness of 0.3 mm. The instrumental contour in this arrangement is 0.8 Å. The equivalent width of the transmission band of continuous spectrum may be expressed by

 $W = W_{\oplus} \frac{S^2}{1 - r^2},$

where Wo is the equivalent width of the transmission band of the filter, S the transmissivity, and r the reflectivity of the cover of the Fabry-Perot etalon. The author used this instrument to record the ring from the nebula NGC 7000 and obtained a recognizable record with an exposure of 10 minutes. Orig. art. has: 1 figure and 1 formula.

ASSOCIATION: Gos. astronomicheskiy institut im. Shternberga (State Astronomical Institute)

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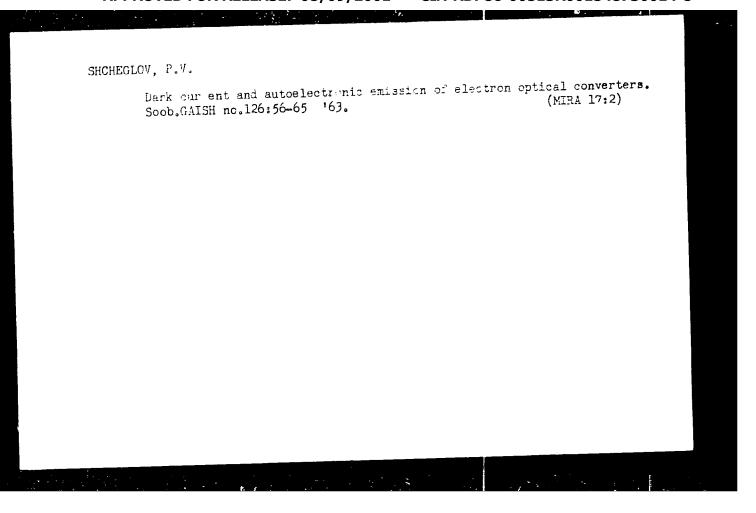
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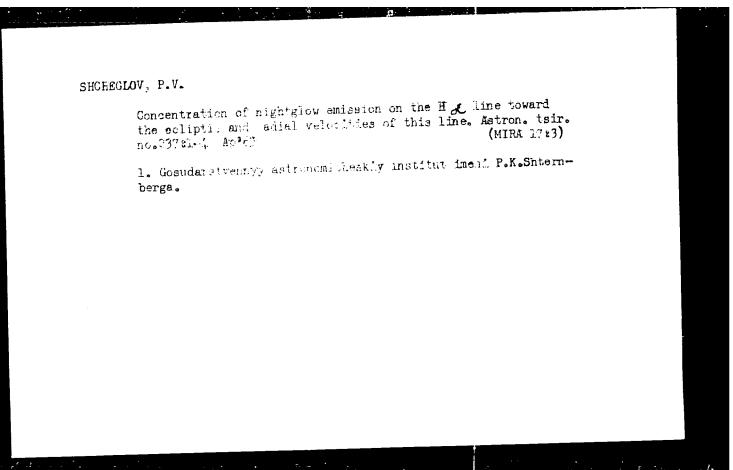
Plane hydrogen clord around the earth. Priroda 52 no.8:25-83
(MIRA 16:9)

Ag '63.

1. Gosudarstvenny, astronomicheskiy institut imeni Shternberga,
Moskva.

(Hydrogen) (Atmosphere)



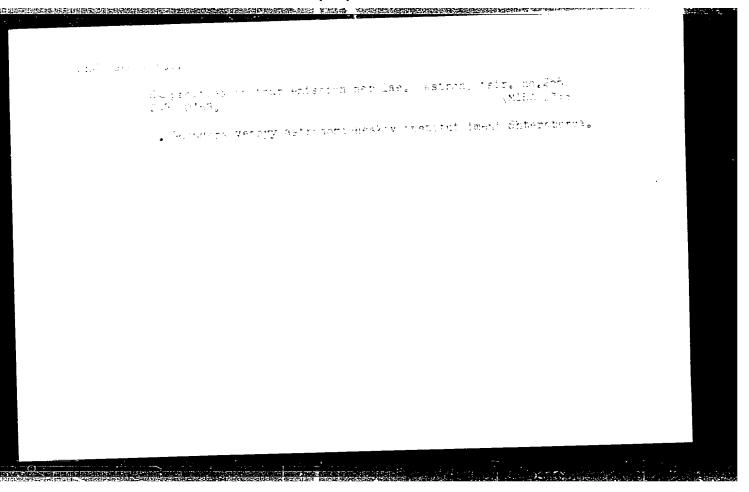


SHCHEGLOV, P.V.

Observations of an unusual netula near the direction toward the galactic center. Astron. tsir. no.240:2-4 Ap '63.

(MIKA 17:6)

1. Cosudarstvennyy astronomicheskiy institut imeni Shternberga.



SH HUMLON, I V., red.; SHAROT, A.S. [translator]; eASSOLC, V.S.; red.;

[Hew methods in astrophysics. Translated from the English and French | Novye metody v astrofizike. Monkva, Izi-ve | Thir, " 1964. 251 p. (MIRA 18:5)

SHCHEGLOV, P.V.

Concentration of the night sky H \propto emission toward the ecliptic and the radial velocities of this line. Astron.zhur. 41 nc.2: 371-377 Mr-Ap '64. (MIRA 17:4)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga.

ACCESSION NR: AP4040840

S/0033/64/041/003/0425/0429

AUTHOR: Gershberg, R. Ye.; Shcheglov, P. V.

TITLE: Investigation of radial velocities and inner motions of diffuse nebulae by means of a Fabry-Perot etalon

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 3, 1964, 425-429

TOPIC TAGS: diffuse nebula, interferometer, radial velocity, uniform brightness, thermal emission, supergiant star, dilatation walocity, proper motion, shock wave

ABSTRACT: The diffuse nebulae NGC 7000, NGC 6618, NGC 6523, NGC 1976, NGC 7822, and IC 1318a have been measured by means of an interferometer equipped with a filter for the Ha line. Radial velocities were determined in all nebulae. The northern part of the nebula NGC 7000 is an emitting source of uniform brightness; its emission is of thermal nature and may be considered as due to thermal motion of the H II zone. The diffuse nebula NGC 6618 consists of filaments which are believed to be the result of the explosion of a supergiant star. The dilatation velocity of the envelope of this nebula is theoretically

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determined to be 100 km sec $^{-1}$, but has not been proved experimentally. Velocities of various parts of the nebula in radial directions were found to range from -40 to +61 km sec $^{-1}$. The velocity of the central part was found to be +27 km/sec $^{-1}$. Measurements in the central, bright part of the nebula NGC 6523 yielded positive and negative velocities. This nebula is considered to be a dilating gaseous formation with an expansion velocity of 25 km sec $^{-1}$. The proper motion of the nebula is +8 km sec $^{-1}$. The measured velocities in the nebula NGC 1976 exceed the thermal type and may be explained by weak shock waves. Orig. art. has: 4 figures and 2 formulas.

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ASSOCIATION: Gos. astronomicheskiy in-t im. P. K. Shternberga (State Astronomical Institute); Krymskaya astrofizicheskaya observatoriya Akademii nauk SSSR (Crimean Astrophysical Observatory, Academy of Sciences SSSR)

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ACC NR: AT5027124

SCHRCE CODE: UR/0000/65/000/000/0042/0042

AUTHOR: Shcheglov, F. V.

ORG: none

TITLE: Requirements necessary for the operation of image translators (image

converter tube) for astronomical study

STURCE: AN SSSR. Astronomicheskiy sovet. Komissiya priborostroyeniya. Soveshchaniye. Kazan 1964, Novaya tekhnika v astronomii (New techniques in astronomy); materialy soveshchaniya, no. 2. Moscow, Izd-vo Nauka, 1965,

TOFIC TAGS: astronomy, electronic equipment, image converter, image tube

ABSTRACT: Electron-optical <u>image converter tubes</u> have been in use for the past 15 years. Therefore, it is possible now to summarize the requirements necessary for their operation. Evidently the optimal conversion factor is only slightly over 1000. But the problem still requires additional study. The simple scaled-

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off systems have the best dark background. The amplification of cascade apparatuses in the Crimea Observatory had to be decreased to several hundreds to obtain a background comparable to that of the sky. This interferred with the normal work of the cascade converter and increased its sensitivity to magnetic interference. To date the literature mentions no spectrum of a weak object for registration in the cascade converter. The problem of photocathodes, the use of an electron camera, its focusing etc. are still to be solved.

SUB CODE: 03,03/SUBM DATE: 25Jun65/

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L 27472-66 EWT(1) GW

ACC NR: AP6016848

SOURCE CODE: UR/0026/66/000/005/0071/0081

AUTHOR: Shcheglov, P. V. (Candidate of physico-mathematical sciences)

21 B

ORG: State Astronomical Institute im. P. K. Shternberg (Gosudarstvennyy astronomicheskiy Institut)

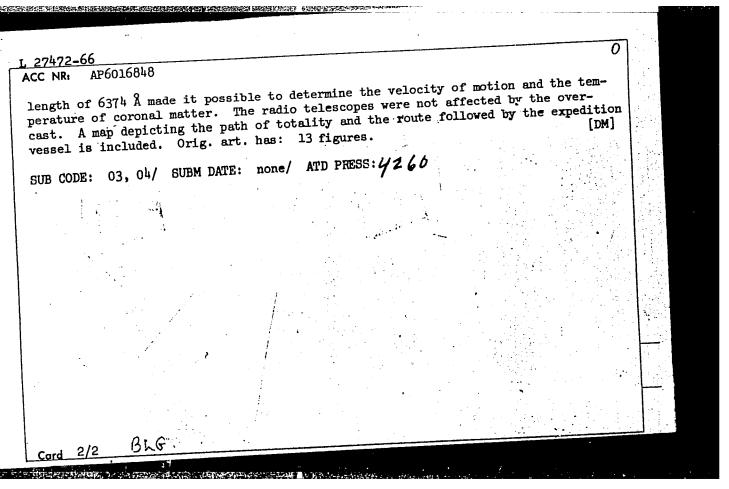
TITLE: Eclipse in the Pacific Ocean

SOURCE: Priroda, no. 5, 1966, 71-81

TOPIC TAGS: eclipse, Marane expediation, total solar eclipse, corona, solar eclipse

ABSTRACT: A description and some preliminary results of the expedition of the scientific research vessel "Vityaz'" carrying a party of 24 Soviet astronomers to Manuae Atoll to observe the total solar eclipse of 30 May 1965 are given. Oceanographic investigations were also conducted at points along the cruise route — Vladivostok, Samoa, Manuae Atoll, the Hawaiian Islands, and Vladivostok. The Soviet expedition had at its disposal two high-quality spectrographs, several interference instruments, and radio telescopes. At the time (9^h26^m34^s) of totality, cloud conditions hindered visual observations. However, the interference instruments yielded valuable negatives, and direct long focal length and color photos were obtained. Some spectrograms of medium dispersion were obtained, but the high-dispersion spectrographs needed for the entire 220 seconds of totality were unsuccessful. Measurements of an interference photo of the solar corona obtained in the red line of FeX at a wave-

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