



TABLE OF CONTENTS

Preface	xi
List of participants	xiii
I. FLARE STARS. OPTICAL OBSERVATIONS AND FLARE STATISTICS.	
L.V. MIRZOYAN Flare stars in star clusters, associations and solar vicinity (Invited paper)	1
B.R. PETTERSEN, K.P. PANOV, M.S. IVANOVA, C.W. AMBRUSTER, E. VALTAOJA, L. VALTAOJA, S. AVGOLOUPIS, L.N. MAVRIDIS, J.H. SEIRADAKIS, S.R. SUNDLAND, K. OLAH, O. HAVNES, Ö. OLSEN, J.E. SOLHEIM, T. AANESEN The flare activity of AD Leo 1972–1988	15
R.E. GERSHBERG, I.V. ILYIN, N.S. NESTEROV, R.G. GETOV, M. IVANOVA, K.P. PANOV, M.K. TSVETKOV, G. LETO Photometrical, spectral and radio monitoring for EV Lac in 1986 and 1987	19
A.S. MELKONIAN Electrophotometric observations of the EV Lac flares in U, H $\alpha$ and H $\beta$	25
K.P. PANOV, M.S. IVANOVA, A. ANTOV Rapid spike flares on AD Leo and EV Lac	27
N.D. MELIKIAN, V.S. SHEVCHENKO Photoelectric observations of flares on UV Ceti	31
V.P. ZALINIAN, A.A. KARAPETIAN, H.M. TOVMASSIAN Two-colour observations of spikes and flares with high time resolution	33
B.E. ZHILYAEV, Ya.O. ROMANJUK, O.A. SVYATOGOROV A short-lived flare on EV Lacertae	35
A.V. BERDYUGIN Diagnostic possibilities of the Walrawen photometric system	37
I.V. ILYIN, N.I. SHAKHOVSKAYA The flare activity of two peculiar red dwarfs	41
K. ISHIDA Statistics of flares observed for UV Ceti type stars YZ CMi, AD Leo, and EV Lac at the Okayama Observatory	43

B.R. PETERSEN Flare activity levels for fully convective red dwarfs	49
N.I. SHAKHOVSKAYA Some physical consequences from the flare statistics of the UV Cet type stars in the solar neighbourhood	53
N.I. BONDAR Search for slow light variations of red-dwarf stars	55
A.T. GARIBJANIAN, V.V. HAMBARIAN, L.V. MIRZOYAN, A.L. MIRZOYAN Distribution of red dwarfs in general galactic field on the basis of stellar star statistics	59
H.S. CHAVUSHIAN, G.H. BROUTIAN New observations of flare stars in the Pleiades by the method of stellar tracks	63
J. KELEMEN Possible new, bright flare star in the Pleiades region	67
G. SZÉCSÉNYI-NAGY Data filtering in statistical studies of flares recorded in sky fields of stellar aggregates - demonstrated with the example of the Pleiades	71
A.L. MIRZOYAN, M.A. MNATSAKIANIAN On two possible groups of flare stars in Pleiades	77
A.S. HOJAEV Flare activity of stars in the Taurus region	81
R. ANIOL, H.W. DUERBECK, W.C. SEITTER, M.K. TSVETKOV An automatic search for flare stars in southern stellar aggregates of different ages	85
L.V. MIRZOYAN, V.V. HAMBARIAN, A.T. GARIBJANIAN Spectral observations of flare stars	95
H.W. DUERBECK, M.K. TSVETKOV NIT spectra of the flare stars HM1 and HM2 in the R Coronae Austrinae aggregate	99
R.Sh. NATSVLISHVILI Catalog of flare stars in Orion nebula region	101
M.K. TSVETKOV, K.P. TSVETKOVA A catalogue of flare stars in the Cygnus region	105

E.S. PARSAMIAN, G.B. OHANIAN Slow flares in stellar aggregates and solar vicinity	109
M.A. MNATSAKANIAN, A.L. MIRZOYAN A prediction of the flare activity of stellar aggregates	113
L. PIGATTO Flare stars as age indicators in open clusters	117
V.V. HAMBARIAN, A.T. GARIBJANIAN, L.V. MIRZOYAN, A.L. MIRZOYAN The relative number of flare stars in systems of different ages	121
K.R. LANG Flare stars at radio wavelengths (Invited paper)	125
A.O. BENZ, M. GÜDEL, T.S. BASTIAN, E. FÜRST, G.M. SIMNETT, L. POINTON Broadband spectral radio observations of flare stars	139
P.M. HEROUNI, V.S. OSKANIAN Radio flare on eta Gemini star	145
R. PALLAVICINI, L. STELLA, G. TAGLIAFERRI X-ray emission from solar neighbourhood flare stars	147
C.J. BUTLER Balmer and soft X-ray emission from solar and stellar flares	153
J.P. CAILLAULT, S. ZONEMATKERMANI X-ray variability in the Orion nebula	159
II. FLARE STARS AND RELATED OBJECTS. T TAURI STARS.	
V.A. AMBARTSUMIAN Some resolutions on T Tauri stars (Invited paper)	163
W. HERBST The variability of T Tauri stars	169
G.V. ZAJTSEVA Periodical variations of the brightness of T Tauri	173
R.A. VARDANIAN The polarization discovery and investigation of T Tau stars in Byurakan	177
P. BASTIEN, F. MÉNARD Recent results on polarization of T Tauri stars and other young stellar objects	179

N.I. SHAKHOVSKAYA The UBVRI photometric and polarimetric observations of the T Tau star HDE 283572	185
P.F. CHUGAINOV Axial rotation of BY Dra-type stars and related objects	189
G.F. GAHM Flares on T Tauri stars (Invited paper)	193
I. APPENZELLER T Tauri stars and flare stars: common properties and differences	209
W. GÖTZ Circumstellar phenomena and the position of T Tauri stars in the colour-magnitude diagram	215
P.P. PETROV High resolution spectroscopy of RY Tauri: variability of the Na D line profiles	219
R.D. SCHWARTZ Herbig-Haro phenomena associated with T Tauri: evidence for a precessing jet?	221
K. ISHIDA Survey observations of emission line stars and Herbig-Haro objects at the Kiso Observatory	225
III. FLARE STARS AND RELATED OBJECTS. FUORS AND OTHER NON-STABLE OBJECTS.	
B. REIPURTH FU Orionis eruptions and early stellar evolution (Invited paper)	229
L.G. GASPARIAN, A.S. MELKONIAN, G.B. OHANIAN, E.S. PARSAMIAN Subfuors in Orion association	253
M.A. IBRAHIMOV, V.S. SHEVCHENKO Slow flares and eruptive phenomena in early stages of stellar evolution	257
H.M. TOVMASSIAN, R.Kh. HOVHANNESIAN, R.A. EPREMIAN A new fuor?	261
V.S. SHEVCHENKO, S.D. YAKUBOV Correlation between flare stars and other populations in young clusters and star forming regions	263

T.Yu. MAGAKIAN, T.A. MOVSESSIAN The results of spectral observations of collimated outflows	267
L.I. MATVEYENKO H <sub>2</sub> O megamaser in Orion KL	271
I.V. GOSACHINSKIJ, N.A. YUDAEVA, R.A. KANDALIAN, F.S. NAZARETIAN, V.A. SANAMIAN Flares of radio line emission H <sub>2</sub> O in Ori A and W49N	275
R.L. GYULBUDAGHIAN, R.D. SCHWARTZ, L.F. RODRIGUEZ On the connection between the IRAS point sources and galactic nonstable objects	279
T.A. MOVSESSIAN The statistical analysis of the optical and infrared luminosities of young stars	283
V. TSIKOUDI Far infrared emission from post-T Tauri stars	287
J. KRELOWSKI, J. PAPAJ, W. WEGNER Residual extinction effects in spectra of newly formed stars	293
IV. THEORETICAL PROBLEMS AND INTERPRETATION OF OBSERVATIONS.	
V.P. GRININ Review of the theoretical models of flares of the UV Ceti-type stars (Invited review)	299
E.R. HOUEBINE, C.J. BUTLER Quiescent chromospheric response to the (E)UV/optical flare radiation field on dMe stars	313
E.A. BRUEVICH, M.A. LIVSHITS The hydrogen atom kinetics in flare star chromospheres	317
M.M. KATSOVA The Balmer decrement in red dwarfs spectra during the flares and quiescent state	321
J.G. DOYLE, G.H.J. VAN DEN OORD, C.J. BUTLER, T. KIANG A model for the observed periodicity in the flaring rate on YY Gem	325
V.S. HAYRAPETYAN, A.G. NIKOGHOSSIAN Pinch-model of flares and its observational consequences	329

H.A. HARUTYUNIAN, V.S. HAYRAPETYAN On the gamma-activity of stellar flares	333
C.H. PAPAS On a differential equation for electromagnetic wave transmission in flare stars and the possible existence of cohesive wave solutions	337
V.P. GRININ, A.S. MITSKEVICH The stochastic approach to the modelling of the line profiles in T Tauri stellar winds	343
C.J. LADA On the origin of dwarf stars (Invited review)	347
T. MONIMERLE Magnetic activity and evolution of low-mass young stars	363
V. PROSPECTS FOR STELLAR FLARE RESEARCH AND CONCLUDING REMARKS.	
M. RODONO Prospects for studies of UV Cet-type flare stars (Invited review)	371
C.J. LADA Closing remarks	393
Author index	395
Subject index	399
Object index	405

