

ASTRONOMICAL INSTITUTE
SLOVAK ACADEMY OF SCIENCES

CONTRIBUTIONS
OF THE ASTRONOMICAL OBSERVATORY
SKALNATÉ PLESO

• VOLUME LIII •

Number 1



February 2023

Editorial Board

Editor-in-Chief

Augustín Skopal, *Tatranská Lomnica, The Slovak Republic*

Managing Editor

Richard Komžík, *Tatranská Lomnica, The Slovak Republic*

Editors

Július Koza, *Tatranská Lomnica, The Slovak Republic*

Aleš Kučera, *Tatranská Lomnica, The Slovak Republic*

Luboš Neslušan, *Tatranská Lomnica, The Slovak Republic*

Vladimír Porubčan, *Bratislava, The Slovak Republic*

Theodor Pribulla, *Tatranská Lomnica, The Slovak Republic*

Advisory Board

Bernhard Fleck, *Greenbelt, USA*

Arnold Hanslmeier, *Graz, Austria*

Marian Karlický, *Ondřejov, The Czech Republic*

Jan Vondrák, *Prague, The Czech Republic*

©

Astronomical Institute of the Slovak Academy of Sciences
2023

ISSN: 1336-0337 (on-line version)

CODEN: CAOPF8

Editorial Office: Astronomical Institute of the Slovak Academy of Sciences
SK - 059 60 Tatranská Lomnica, The Slovak Republic

CONTENTS

EDITORIAL

A. Skopal, R. Komžík: Editorial	5
--	---

STARS

P.-J. Chen, Z.-Y. Wang: Stochastic nonlinear self-oscillatory model of an accretion disk for the X-ray bursting of the microquasar GRS 1915+105	7
Y.V. Vasylykivskiy, S.V. Stepkin, O.O. Konovalenko: The low-frequency carbon radio recombination lines in medium toward S140 nebula	17

GENERAL ASTRONOMY

A. Yılmaz: Appropriate site selection for the astronomical observatory - Erzincan province sample application	28
--	----

CELESTIAL MECHANICS

M. Vavrukh, D. Dzikovskyi: Optimal conditions of the spacecraft acceleration in the gravitational field of planet	46
M. Vavrukh, D. Dzikovskyi: Analytical images of Kepler's equation solutions and its analogues	58

The Contributions of the Astronomical Observatory Skalnaté Pleso
are available in a full version
in the frame of ADS Abstract Service
and can be downloaded in a usual way from the URL address:

<https://ui.adsabs.harvard.edu/>

as well as from the web-site of
the Astronomical Institute of the Slovak Academy of Sciences
on the URL address:

<https://www.astro.sk/caosp/caosp.php>

The journal is covered/indexed by:

Web of Science (WoS)

WoS Core Collection: Science Citation Index Expanded

SCOPUS

Index Copernicus International