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J. Freimanis, I. Šmēlds. XXVIII General Assembly of the International Astronomical Union in Beijing (concluded).

### **LATVIAN SCIENTISTS**

I. Vilks. Life Devoted to Satellites: Kazimirs Lapuška (1936-2013).

### **The WAYS of KNOWLEDGE**

W. Heisenberg. On Humanitarian Education, Natural Sciences and Western Cultural Relations (concluded).

### **FLASHBACK**

A. Alksnis. Astronomy Students of the Latvian State University – Graduates of 1952 (concluded).

A. Alksnis. Zelma Āboliņa Narrated. . .

I. Vilks. A Star Wise Looks into Magnifying Tube.

### **HOLDERS KĀRLIS KAUFMANIS’ MEMORIAL SCHOLARSHIP**

E. Matrozis. Astronomy Studies Abroad.

### **For SCHOOL YOUTH**

D. Docenko, D. Bočarov, A. Cēbers, L. Dolgova, J. Timošenko. The 38th Open Olympiad of Latvia in Physics.

M. Avotiņa. Solutions of Problems of 63rd Latvian Olympiad in Mathematics.

### **MARS in the FOREGROUND**

J. Jaunbergs. Tracing the Moisture in Martian Dust.

### **COSMOS as an ART THEME**

D. Lapāne, S. Upešleja. When the Winter Frost Is Cracking... (Children’s Poetry).

### **CHRONICLE**

I. Eglītis. Institute of Astronomy of the University of Latvia in 2012 (concluded).

S. Kropa. The 2013 European Astronomy Journalism Prize.

M. Gills. Sundials with Boulders and Steel.

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Winter of 2013/14.

Supplement: Astronomical Phenomena and Planet Visibility in 2014: A Complex Diagram(compiled by J. Kauliņš)

## **CONTENTS (The STARRY SKY, No. 223, Spring 2014)**

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Z. Alksne, A. Balklavs, J. Francmanis. Extraordinary General Assembly of the International Astronomical Union in People’s Republic of Poland (abridged).

E. Grasbergs. Magnetic Stars (abridged).

N. Cimahoviča. The Sun and Earth's Climate (abridged).

### **DEVELOPMENTS in SCIENCE**

K. Schwartz. Magnetic Field of the Earth: Origin and Geological Evolution.

R. Misa. Closer to the Big Bang – LHC Status and Plans.

### **DISCOVERIES**

D. Docenko. Last Observations and First Results of the Planck Space Observatory.

### **SPACE RESEARCH and EXPLORATION**

I. Kešāns. China's Race to Space.

### **In OTHER OBSERVATORIES**

V. Lapoška. Worldwide Virtual Observatory.

### **FLASHBACK**

A. Alksnis. Half a Century of Baldone Schmidt Telescope Soon.

### **WINNERS of KĀRLIS KAUFMANIS' MEMORIAL SCHOLARSHIP**

E. Veide. Attracting Young People to Astronomy.

### **For SCHOOL YOUTH**

M. Avotiņa. Latvian Students Team Takes First Place in Competition "Baltic Way 2013".

### **For AMATEURS**

I. Dinsbergs. Observations of Nuctilucent Clouds in the Summer of 2013.

M. Krastiņš. Starry Nights in the Moods of Kurzeme History. Star Party y Aquilae.

K. Kemlers. Astrophotography in Latvia: Dreams and Reality.

M. Gills. Ten Star Parties for Hobby Astronomers.

### **NEW BOOKS**

I. Lipska. Stephen Hawking and Leonard Mlodinow: The Grand Design.

N. Cimahoviča. Megaliths as Epistle of Ages.

### **CHRONICLE**

I. Vilks. Missing Stars in Your Everyday Life? Come to Us!

A. Zalcmane. Eclipse-tour 2013: Kenya.

### **READERS' QUESTIONS**

Does Earth's Magnetic Field Have Any Frequency?

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Spring of 2014.

## **CONTENTS (The STARRY SKY, No. 224, Summer 2014)**

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A. Balklavs. Cosmic Microwave Background and Closed Time (abridged).

U. Dzērvītis. Bounds of Universe Broaden (abridged).

A. Balklavs. Neutrino and the Universe (abridged).

#### DEVELOPMENTS in SCIENCE

K. Schwartz. Optics and Structure of the Universe.

#### DISCOVERIES

J. Kalvāns. What Is Interstellar Ice?

A. Alksnis. ALMA Helps to Study the System of  $\beta$  Pictoris.

A. Alksnis. Rings Found around an Asteroid.

I. Pundure. Kepler's Five Years in Searching Exoplanets.

I. Pundure. Length of Exoplanet Beta Pic b Day Measured.

#### SPACE RESEARCH and EXPLORATION

A. Slavinskis. From First Man-Made Fire to Sailing in the Space.

R. Misa. Space Elevator – High-Tech Long Beanstalk.

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S. Kropa. First Step of Giant Radiotelescope in Africa.

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M. Gills. ESON Meeting 2014.

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J. Jansons. Research Foundation of University of Latvia (1935-1940).

A. Alksnis. Half a Century of Baldone Schmidt Telescope Soon (1st continuation).

#### INVESTIGATIONS of the EARTH'S CRUST

L. Bērziņa. Circular Biolocation Anomalies – Energy Centres of Ancient Civilizations in the Structure of Earth Crust.

N. Cimahoviča. Man between the Sky and the Earth.

#### AMID HYPOTHESES

I. Jurgītis. An Event in Canterbury or how the Moon Saved the Earth.

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M. Avotiņa. Third Round Problems of 64th Latvian State Mathematical Olympiad.

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M. Gills. Moon Dials.

M. Gills. Exploring the Space Yourself.

#### CHRONICLE

A. A. , I. P. Fricis Blumbahs (23. X 1864 – 10. VI 1949). Remark.

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Summer of 2014.

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#### **"ZVAIGŽŅOTĀ DEBESS" FORTY YEARS AGO**

Ā. Alksne. Galilean Moons of Jupiter Have Atmosphere (abridged)

A. Alksnis. When it Is Best to Observe Stars in Baldone (abridged)

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O. Dumbrājs. Is Magnetic Monopole Discovered?

#### DISCOVERIES

M. Gills. Minor Planet (85466) Krastins = 1997 JK15

I. Pundure. Kepler-10c – the First Mega-Earth

I. Pundure. Swarm Reveals Changes in Earth's Magnetism

#### SPACE RESEARCH and EXPLORATION

R. Misa. A Conversation with Pauls Irbins about Participation in Mars One's Human Mission to Mars

K. Zālīte. Synthetic Aperture Radar or where else Can We Use Microwaves?

#### OBSERVATORIES and INSTRUMENTS

A. Alksnis. The Paranal Observatory Telescopes and Instruments

#### LATVIAN SCIENTISTS

J. Freimanis. Reviewing My 60 Years of Life

#### FLASHBACK

I. P. , A. A. On F. I. Blumbahs (1864-1949) in Few Publications

A. Alksnis. Half a Century of Baldone Schmidt Telescope Soon (2nd continuation)

#### INVESTIGATIONS of the EARTH'S CRUST

L. Bērziņa. Circular Biolocation Anomalies – Energy Centres of Ancient Civilizations in the Structure of Earth's Crust (Stone Age)

#### For SCHOOL YOUTH

M. Krastiņš. Latvia's 42nd Open Astronomy Olympiad for Secondary School Students

M. Avotiņa. Solutions of Third Round Problems of 64th Latvian State Mathematical Olympiad

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R. Misa. Few Pictures from July 11

K. Bērziņš. Meteorite Lixna Returns to Latvia to Stay Permanently

#### CHRONICLE

A. Atvars. General Meeting of Association FOTONIKA-LV

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Autumn of 2014

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J. Stradiņš. Vestige of Otto Schmidt in Latvia (abridged).

Leonora Roze. All-Union Conference in Latvian State University (abridged).

#### DEVELOPMENTS in SCIENCE

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A. Alksnis. Light Echoes from Supernova 2014J in Galaxy M82.

A. Alksnis. Discovery of the Benešov Meteorites 20 Years after the Bolide Event.

I. Pundure. Giant Filament on the Sun Watched by NASA's SDO.

I. Pundure. MAVEN's Mars Exploration Mission Started.

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J. Freimanis. Reviewing My 60 Years of Life (concluded).

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A. Kļaviņš. 9th Heidelberg Summer School „Frontiers of Stellar Structure and Evolution”.

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A. Alksnis. Half a Century of Baldone Schmidt Telescope Soon (concluded).

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A. Zariņš. The Moon Illusion.

K. Kemlers. Cigar Galaxy M82 and Supernova.

M. Gills. Challenges of Becoming an Astronomer.

#### COSMOS as an ART THEME

J. Limansky, A. Limansky. Astronomy in Philately Beyond IYA 2009: 2010-2013.

D. Lapāne. Natural Phenomena in Vija Celmiņš' Art: Dual Reality without Narrative.

#### CHRONICLE

J. Kaminskis. Conference Dedicated to Fricis Blumbahs' 150th Anniversary in Talsi District.

I. Pundure. Visiting Fricis Blumbahs in First Forest Cemetery.

M. Gills. Sundial with Fox in Varakļāni.

I. Pundure. Forum on Latvia's Astronomy.

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E. Alksnis. Pluto Strikes Back.

J. Kauliņš. ASTRONOMICAL PHENOMENA in Winter of 2014/15.

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M. Ābele. Laser Ranging in Egypt (abridged).

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K. Schwartz. Continental Drift, Volcanism and Earthquakes.

##### DISCOVERIES

I. Eglītis. News from UL Institute of Astronomy.

I. Pundure. Impressive Light Display Resulting from Collision of Galaxies NGC 2207 and IC 2163.

I. Pundure. Hubble Uses Quasar Light to Probe Milky Way's Mysterious Fermi Bubbles.

##### INTERNATIONAL YEAR of LIGHT and LIGHT-BASED TECHNOLOGIES

A. Alksnis. 2015 – International Year of Light and Light-based Technologies.

R. Kokins. How Old is Light? The Biblical View of Light.

##### SPACE RESEARCH and EXPLORATION

I. Pundure. 25 Years of Hubble Space Telescope.

I. Pundure. Hubble Captures Jupiter's Rare Triple-Moon Conjunction.

R. Misa. Towards a Nuclear Age. Discussion with a Research Group Representative from Washington University.

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J. Jansons. Yuriy Kuzmin (12. 10. 1940–02. 09. 2014), University Professor.

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A. Alksnis. Student Group Visiting Baldone Observatory.

A. Alksnis. Short Trips and Faraway Journeys.

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M. Avotiņa. European Girls' Mathematical Olympiad.

M. Krastiņš. Seminar for Teachers of Astronomy in Baldone.

M. G. Contest Catch a Star! for Students.

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J. Jaunbergs. The Grey Colour of Mars.

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M. Krastiņš. Eagle's Flight from Alpha to Omega.

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J. Limansky, A. Limansky. Astronomy in Philately after IYA 2009: 2010-2013 (continued).

K. Bērziņš. Let Us Save Latvia's Nerft Meteorite!

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A. Slavinskis. On Latvia's Participation in the European Space Agency.

K. Bērziņš. Dismounting of Irbene's Radio-Telescopes.

A. Alksnis. The Caucasus Mountain Observatory of Sternberg Astronomical Institute GAISH and Variable Star RW Aur.

J. Kauliņš. ASTRONOMICAL PHENOMENA in Spring of 2015.

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Z. Alksne. On Discovery of New Stars (abridged).

A. Balklavs. The Nobel Prize for Radio Astronomers (abridged).

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I. Pundure. Planetary System of Five Small Planets from the Dawn of Time.

I. Pundure. Chance Meeting of PN A66 33 and HD 83535 Results in Celestial Diamond Ring.

I. Pundure. Observations of the First Galaxy Field Abell 2744 Complete.

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A. Cibulis. Mathematician Jānis Dambītis – 85.

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J. Jansons. Yuriy Kuzmin (12. 10. 1940–02. 09. 2014), University Professor (concluded).

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AURORA BOREALIS and SOLAR ECLIPSE

M. Gills. Week of 2015 Spring Equinox in Riga.

R. Misa, A. Šimis, E. Kubuliņa-Vilne. Observations in Latvia.

A. Zalcmane. To Far North for Total Solar Eclipse.

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M. Keruss. Flashback of StarParty #13 2015 or "Light".

M. Gills. Time Dimension of Klaipeda.

NEW BOOKS

N. Cimahoviča. Cosmic Reflexion in Latvia's Fine Arts.

J. Balodis. Looking through the Book by Jānis Klētnieks "Astronomy and Geodesy in Latvia till 20th Century".

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J. Limansky, A. Limansky. Astronomy in Philately after IYA 2009: 2010-2013 (2nd continuation).

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A. Balklavs-Grīnhofs. Astro-magic Called Astrology.

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I. Pundure. On Title of Movie Dedicated to Astrophysicist Hawking.

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Summer of 2015.

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E. Mūkins. Gravitation Maneuver in Interplanetary Flights (abridged).

E. Mūkins. «Mariner-10» Passing Mercury for the Third Time (abridged).

A. Balklavs. Discussing «Missing Mass in the Universe» (abridged).

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K. Schwartz. Structure of Universe: Stars, Galaxies and Clusters of Galaxies.

D. Docenko. Hawking Radiation.

ESO COSMIC GEMS

I. Pundure. Beautiful Gorgon Medusa Nebula.

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J. Jaunbergs. A Big Day for Pluto.

SPACE TECHNOLOGY in PRACTICE

O. Dumbrājs. Millimeter Waves in Fight against Terrorism.

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R. Misa. Project Orion – boom, boom, boom in Space.

A. Alksnis. Short Trips and Faraway Journeys (2nd continuation).

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M. Avotiņa. Solutions of Third Round Problems of 65th Latvian State Mathematical Olympiad.

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J. Balodis. Looking through the Book by Jānis Klētnieks "Astronomy and Geodesy in Latvia till 20th Century" (continuation).

#### COSMOS as an ART THEME

J. Limansky, A. Limansky. Astronomy in Philately after IYA 2009: 2010-2013 (concluded).

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Autumn of 2015.

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A. Alksnis. Interesting Infrared Object: A Carbon Star CIT 6 or RW LMi (abridged).

I. Rabinovičs. Intelligibly about P. Bohl's Quasi-periodic Functions (abridged).

M. Zepe. 300 Years of Speed of Light (abridged).

#### DEVELOPMENTS in SCIENCE

K. Schwartz. Black Holes in Universe.

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I. Pundure. Hubble Finds a Pair of Black Holes in the Nearest Quasar Mrk 231.

I. Pundure. Glittering Celestial Tapestry of Hubble's Silver Anniversary.

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J. Jaunbergs. The Realm of Nitrogen Ice.

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D. Draviņš. International Astronomical Union and Its General Assambles.

#### FLASHBACK

A. Alksnis. Short Trips and Faraway Journeys (3rd continuation).

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D. Docenko, A. Cēbers, D. Bočarov, J. Timošenko. The 40th Open Olympiad of Latvia in Physics.

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M. Krastiņš. Trends from the Universe in Mālpils. Camp "Aquila 2015".

M. Keruss. 14th Gathering of Amateur Astronomers: This Time on "Darkness".

#### BOOKS

I. Vilks. 100 Books on Astronomy in Latvian.

J. Balodis. Looking through the Book by Jānis Klētnieks "Astronomy and Geodesy in Latvia till 20th Century" (concluded).

#### COSMOS as an ART THEME

J. Štrauss. Astronomy in Latvian Postage Stamps.

N. Cimahoviča. Rainis on Soul in Stellar Space.

#### CHRONICLE

K. Bērziņš. Irbene Radio Telescopes Resume Operation.

M. Gills. Meeting of Sundialists in Riga.

#### READERS' SUGGESTIONS

A. Balklavs-Grīnhofs. Astro-magic Called Astrology (1st continuation).

J. Kauliņš. ASTRONOMICAL PHENOMENA in Winter of 2015/16.

I. Eglītis. Five New Asteroids Discovered Using Baldone Schmidt Telescope.

Supplement: Astronomical Phenomena and Planet Visibility in 2016: A Complex Diagram(compiled by J. Kauliņš)

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I. Platais, I. Jurgītis. Nova Cygni 1975 (abridged).

E. Mūkins. To Search Life on Mars (abridged).

### **DEVELOPMENTS in SCIENCE**

K. Schwartz. Plasma and the Universe.

R. Misa. The LHC and Beyond: The Vision of CERN.

### **DISCOVERIES**

I. Vilks, A. Kalniņa. A Possible Replacement for Pluto.

I. Pundure. Strange Star KIC 8462852 in the Constellation Cygnus.

I. Pundure. Hubble Captures Image of Dazzling Diamond-like Stars Tapestry.

### **SPACE RESEARCH and EXPLORATION**

J. Jaunbergs. The Art of Rocket-powered Landings.

M. Gills. Flower in International Space Station.

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L. Gulbe. Satellites, Computers and Opportunity to See More.

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D. Docenko. Mutable Ghost Particles: Nobel Prize in Physics 2015.

M. Auziņš. Einstein and His Nobel Prize.

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A. Ambainis. Professor Rūsiņš Mārtiņš Freivalds (1942-2016).

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A. Alksnis. Short Trips and Faraway Journeys (4th continuation).

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M. Avotiņa, A. Šuste. International Mathematical Olympiad.

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A. Zalcmane. JAK Meetings Resume.

I. Vilks. A Piece of Lunar Rock at F. Zander's Museum.

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D. Draviņš. Conflicts about the Thirty Meter Telescope on Hawai'i Island Remain Unresolved.

V. Reinberga. Opening of Exposition Cosmic Light in “Zvaigžņotā Debess”.

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A. Balklavs-Grīnhofs. Astro-magic Called Astrology (2nd continuation).

J. Kauliņš. ASTRONOMICAL PHENOMENA in Spring of 2016.

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A. Balklavs. New Studies and Conclusions on Nucleus of the Galaxy (abridged).

U. Dzērvītis. Discussion on Planetary System of Barnard’s Star Continues (abridged).

M. Eliāss. Meeting of Solar Radio Radiation Section (abridged).

### **DEVELOPMENTS in SCIENCE**

O. Dumbrājs. Neutrino Oscillations: from the Outset to the Nobel Prize.

R. Misa. Conversation with Andris Ambainis on Quantum Computing Science.

### **DISCOVERIES**

F. Gahbauer. First Direct Detection of Gravitational Waves.

I. Pundure. ATLASGAL Survey of Milky Way Completed.

### **SPACE RESEARCH and EXPLORATION**

J. Jaunbergs. The Story of Pluto’s Satellites.

K. Schwartz. Conducting Ice and Magnetic Field of Uranus and Neptune.

K. Salmiņš. The Institute of Astronomy Get First Laser Ranging Results from ESA Satellite Sentinel-3A.

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J. Jansons. Birth Anniversary of Voldemārs Fricbergs (1926–1982), Professor of Physics.

### **LATVIAN SCIENTISTS**

J. Jansons. Professor of Physics Academician Juris Ekmanis (2-XII-1941–9-IV-2016).

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I. Vilks. Undeservedly Forgotten Roberts Makstis.

A. Alksnis. Short Trips and Faraway Journeys (5th continuation).

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M. Keruss. 15th Hobby Astronomers’ Workshop in Starspace Observatory.

M. Gills. Public Sundials in Latvia 2011-2015.

### **CHRONICLE**

I. Eglītis. Surprising Findings of Baldone Observatory’s Astrophotography Archives.

K. Salmiņš. The Institute of Astronomy Will Participate in International Experiment GREAT.

I. Vilks. Exoplanets Get Names.

R. Ferber, M. Tamanis. Laboratory Research Boosts Astrophysics.

I. Vēliņa-Švilpe. Digitized Magazine Zvaigžnotā Debess/The Starry Sky.

J. Kauliņš. ASTRONOMICAL PHENOMENA in Summer of 2016.

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A. Balklavs. In the Nuclei of Galaxies – White or Black Holes? (abridged).

I. Šmelids. Is Earth and Asteroid Collision Expected? (abridged).

E. Mūkins. Probes «Helios» in Orbit Close to the Sun (abridged).

### **DEVELOPMENTS in SCIENCE**

K. Schwartz. Neutron Stars and Magnetic Fields of Galaxies.

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A. Zariņš. FU Orionis Phenomenon of Variable Stars.

I. Pundure. Hubble Space Telescope Better than Ever after Final Servicing Mission.

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J. Jaunbergs. A New Arrival in the Jovian System.

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J. Stradiņš. Our Academy of Sciences – 70.

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J. Dambītis, A. Cibulis. First Computers in Latvia.

A. Alksnis. Short Trips and Faraway Journeys (6th continuation).

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M. Krastiņš. Latvia's 44th Open Astronomy Olympiad for Secondary School Students.

K. Adgere, K. Bērziņš. 40th Scientific Conference of Latvian Secondary School Students.

M. Avotiņa, A. Šuste. Solutions of Third Round Problems of 66th Latvian State Mathematical Olympiad.

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A. Zalcmane. Trip to Sulawesi to See Total Solar Eclipse.

M. Gills, R. Misa. Mercury Transit Observations in Riga.

J. Kauliņš. ASTRONOMICAL PHENOMENA in the Autumn of 2016.

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A. Balklavs. New Possibilities in Search of Cosmic Gravitational Waves (abridged).

E. Mūkins. "Venus-9" and "Venus-10" Scientific Accomplishment (abridged).

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K. Schwartz. The Unknown Solar Corona.

DISCOVERIES

I. Pundure. Gaia Has Obtained Billion-Star 3D Map.

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J. Jaunbergs. Tar Lakes of Titan.

R. Misa. A Step Closer to Stars.

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J. Balodis. Copernicus Is Becoming an Impressive Business.

K. Bērziņš. Conference of Young European Radioastronomers at the Latvian Centre in Germany.

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A. Alksnis. Short Trips and Faraway Journeys (concluded).

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D. Bočarov, J. Timošenko, D. Docenko, A. Cēbers, A. Katkevičs. Latvia's 41st Open Olympiad in Physics.

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M. Keruss. 16th Gathering of Amateur Astronomers in Starspace Observatory.

M. Gills. Public Sundials in Latvia 2011-2015 (concluded).

I. Vilks. Pictures of Star Trails.

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J. Limansky. Solar Eclipses in Philately.

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I. Eglītis. Research and Organisational Activities of LU Institute of Astronomy in 2015.

I. Pundure. Zvaigžņotā Debess at the Latvian Academy of Sciences on 4th October.

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A. Balklavs-Grīnhofs. Astro-magic Called Astrology (concluded).

Ē. Apinis. Astrology and Prophecy.

Ē. Apinis. Sundial for Latvia's Coming Centuries!

J. Kauliņš. ASTRONOMICAL PHENOMENA in Winter of 2016/17.

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E. Mūkins. Clouds of Venus: Structure and Composition (abridged).

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