ginnings up to present day and supplements the text with rich photographic material.

Mária Gallová draws parallels and similarities between lives of Nicolaus Thege-Konkoly (1842–1916) and Milan Rastislav Štefánik (1880–1919). Štefánik was a Slovak astrophysicist who worked at Meudon Observatory (France) under the tutorship of Jules Janssen at the beginning of the twentieth century. He was also a military general and a politician and played a decisive role in the creation of independent Czechoslovakia in 1918. Both men were avid observers and scientists not only in astrophysics but also in meteorology. Both were members of scientific societies, had some relationship to art, were politicians, etc. Although they lived in the same country they never met each other.

Ladislav Hric briefly summarizes the history of astrophysics from Konkoly's era up to the twenty-first century in the seventh paper.

In the eighth paper, Renáta Kolivošková describes the story of a 60-cm reflecting telescope made by Zeiss in Jena (Germany) in the early 1920s and mounted at Hurbanovo (then Stará Ďala) Observatory in 1928. Up until 1967 it was the largest telescope in the territory of the then Czechoslovakia. In 1930 the telescope was used by Bohumil Šternberk to photographically determine the position of a newly-discovered (dwarf) planet Pluto. This was the first such observation made from Europe. In November 1938, after the First Vienna Award, the telescope was quickly dismantled and transported to a safe place in Prešov (Slovakia) with the hope of constructing a new observatory there. In 1943, however, the telescope was mounted at the Observatory in Skalnaté Pleso, then under the directorship of Antonín Bečvář. Since 1994 the telescope has been at the Modra Astronomical and Geophysical Observatory.

Attila Mizser talks about the Observatory at Nagytagyos (near Tata, Hungary) in the ninth paper. Nagytagyos was another Observatory owned by Thege-Konkoly, which functioned during the period of 1901–1912. There was also a meteorological station, because it was primarily a meteorological observatory, supplemented with astronomical equipment from 1903.

There is then a brief notice about the whole conference session by Zoltán Orha, Hungarian filmmaker, followed by a paper on instrumentation at Hurbanovo Observatory written by Ladislav Pastorek. He traces the development of instruments and observing domes from the foundation of the Observatory in 1871 up until approximately 1910. In the 'golden age' of the Observatory there were 11 domes equipped with various astronomical instruments, some of which were upgraded by Konkoly himself (e.g. spectrographs and spectroscopes that are now on display at the local astronomical museum).

As mentioned previously, geomagnetic research also was conducted at Hurbanovo Observatory. The history of the geomagnetic observations from their beginning up to 2016 is presented in a chapter by Fridrich Valach, the Director of the Earth Sciences Institute of the Slovak Academy of Sciences.

In the final paper of the conference, Marián Vidovenec, the Director of the Slovak Central Observatory, focused on the general historical outline of the whole Observatory and on the life of Nicolaus Thege-Konkoly.

The conference revealed that historians and astronomers from Central European countries still have a lively interest in Konkoly's personality and his scientific achievements.

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***The Lost Planets: Peter van de Kamp and the Vanishing Exoplanets Around Barnard's Star*, by John Wenz. (Cambridge (Mass.), MIT Press, 2019). Pp. xxvi + 171. ISBN 978-0-262-042864 (hardback), 135 × 210 mm, US$24:95.**

The litany of twentieth-century 'discoveries' that have been proven false is not an attractive one for the science of astronomy. While the very nature of scientific discovery is based upon one finding being supplanted by another, the 'rabbit holes' so many astronomers have gone down in the past few decades must serve as a wake-up call to those who mislead the taxpayer who ultimately pays for much of this research.

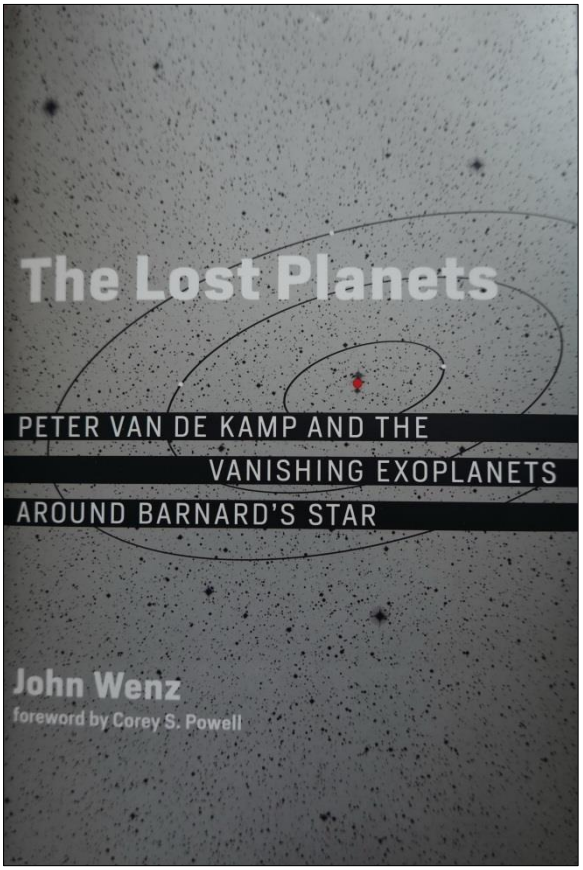
From studies based on lunar science arose the idea, which became very widely accepted, that there was a 'Late Heavy Bombardment' of objects on the Moon around 4 billion years ago. The idea became so alluring it has infiltrated its way into the life sciences, where the energy it released has been used as a convenient way to explain the rise of life itself. Alas, it was all merely a misinterpretation of data, but one that will linger on for many years.

This book by John Wenz tells the equally forlorn tale of the discovery of exoplanets that were widely trumpeted in the press decades ago. For many it was the realisation that science fiction had become science fact. Unfortunately for the public and the careers of all those involved, it really was science fiction.

One of the centres of the activity to find exoplanets and sub-stellar objects (bodies that are too big to qualify as a planet, but too small to initiate nuclear burning) was Sproul Observatory, at Pennsylvania's Swarthmore College.

Astronomers at Sproul spent many years identifying exoplanet candidates, only to be followed by others there who debunked the earlier Sproul findings. Those astronomers, in turn, found sub-stellar objects that were also debunked.

An example of this latter work was done around 1988–1990 on the star Wolf 242. Sproul Director, Wulff-Dieter Heintz, a meticulous astronomer who had disproven exoplanet claims made earlier at Sproul, put forth the idea that the binary stars comprising Wolf 242 were no more than 5% of the Sun's mass, making them too weak for nuclear burning. "It was hailed as a 'victory for old fashioned astronomy' by the New York Times [in 1989]." The newspaper article



"… also noticed that Wolf 242 had been Heintz's 'career obsession'." (page 95). It took the Hubble Space Telescope to finally resolve the masses: it found the stars are well above 10% of the Sun's mass, "… meaning they both remained very small stars …" not sub-stellar objects (page 95). The perils of following a career obsession are obvious. Heintz was using a 24-inch refractor, an extremely modest instrument by modern standards, and one that was pushed far beyond its limits to find what Heintz was looking for. The *New York Times* article was headlined "Life's Quest Rewarded". This book is indeed a sad tale of misbegotten careers.

The 'poster boy' for this is Peter van de Kamp, whose planetary work has "… largely been stricken from the annals of astronomy." (page 117). He began working at Sproul in 1938, and using 2,413 plates taken as far back to 1916, announced at an American Astronomical Society meeting in 1963 that he had discovered a planet orbiting Barnard's Star. He "… believed an object just 1.6 times the mass of Jupiter was lurching around the star every 24 years." (page 31). By 1970 what appeared to be a secondary tug on the motion of the star led van de Kamp to claim yet another planet, 80% the size of Jupiter, also orbited Barnard's Star! "The two-planet hypothesis was a capstone to his career," writes Wenz (page 52). His final publication, the 1986 book *Dark Companions of Stars*, saw van de Kamp launch yet another defence of his Barnard Star observations. In fact, neither of these planets exists, but it was revealed in 2018, based on 20 years of radial velocity data, that a planet three times Earth's mass does indeed revolve around Barnard's Star. So van de Kamp's belief in exoplanets was vindicated after his death (which occurred in 1995), but none of his own exoplanet claims has been verified. Just five months after his death, the first confirmed exoplanet was discovered.

Devoid of the mathematics that would be the hallmark of a text written by a professional, *The Lost Planets* is a well-written and finely researched book by a non-scientist that will have wide appeal. It is an excellent example of twentieth century astronomical history that is also relevant to the area of astronomy that most touches the public's awareness of our science in the twenty-first century. The book has many exciting elements, including personal rivalries at Swarthmore that became what Wenz characterises as "… caustic and combustible." (page 64). Wenz leaves the reader in no doubt about the very high stakes inherent in the search for (and premature claims for) exoplanets.

This book has two typos: on page 52 "… of bringing of …" should read "… of bringing …" and "face" on page 106 should be "fact". It would have benefited by having more illustrations (it has only three) but the 17 pages of footnotes provide up-to-date references.

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Time of Our Lives: Sundials of the Adler Planetarium, by Sara J. Schechner (Chicago, The Adler Planetarium, 2019). Pp.xiii + 474. ISBN 978-0-578-49710-5 (hardback), 255 × 287 mm, US$40.

This fine book, weighing around 2·5kg, is basically a catalogue of the sundials in the Adler Planetarium in Chicago, USA. This volume is said to include about 60% of their collection, and I un-