

There are two possibly contentious issues. The first is that the CV magnitudes are not a good proxy for V , but it has been shown that for much of the eruption $CV = V = R$, although the faintest magnitudes may be too bright relative to V by some probably insignificant, but unknowable, amount. The second issue is that the lower envelope of the eruption has not been sampled and it is certainly true that the statistics are poor, but again this is in the domain of the unknown. Having said that, all the points that appear to define the lower envelope are consistent and provide a result that is not unreasonable.

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CORRESPONDENCE

To the Editors of 'The Observatory'

Otto Heckmann: Friend or Foe?

Some readers might get a false impression of Otto Heckmann from the brief mention of him in Trimble's recent book review in these pages¹, so I would like to add some more information. I studied physics and astronomy at the University of Hamburg and worked as a student at the Hamburg Observatory*, of which Heckmann had been director (long before my time), so while I have no

*The Hamburg Observatory was founded in 1802, and has been at its current location for about 110 years. The University of Hamburg was founded in 1919, taking in the observatory. The Hamburg Observatory became an institute of the department of physics of the University in 1968.

first-hand information, some is second- or third-hand. It is true that Heckmann was a member of the Nazi party (not just before — having joined in 1937 to avoid an end to his career — but also during World War II). It is also true that he continued to employ at least one endangered person — Eleonora Grünwald, who had Jewish ancestry on her father's side; he knew this and was required to report it (which, of course, would have led to her deportation to a concentration camp), but didn't — and probably three more in a similar situation². This is not a contradiction. When they learned that he had joined the Nazi party and that that would allow him to become director in Hamburg, many at the observatory were relieved, because that meant that they wouldn't get a *real* Nazi, especially since there were efforts to install such a person (there were several potential candidates) as director instead of Heckmann. He was the first choice of the preceding director Richard Schorr and the observatory at large after Walter Baade (who, along with Rudolph Minkowski*, had also worked in Hamburg before emigration) had declined. Heckmann was suspicious to the authorities because he didn't oppose Einstein's theory of relativity, and also because he had many Jewish acquaintances and was a sympathizer of the left wing of the *Zentrum* party; at the time, there was a '*Deutsche Physik*' movement (led by Nobel laureate Philipp Lenard) which intended to rid physics of Jewish influence. (Einstein was not only the most famous scientist in the world, but also, though not religious (not that that mattered to the Nazis), didn't hide his Jewish background.) Heckmann managed to get the post by emphasizing Newtonian cosmology² as developed by McCrea and Milne³ (I wonder why this work is almost always referred to as "Milne and McCrea"), intentionally giving the impression that General Relativity might not be needed in cosmology. This was just a smokescreen, however, obvious to those in the know, and Heckmann's book⁴ actually did much to popularize relativistic cosmology. Together with Carl Friedrich von Weizsäcker and others, he was a member of a group opposing the '*Deutsche Physik*', which actually led to the isolation of the latter after 1940, long before the war would end. He had joined the *NS Fliegerkorps* (not actually affiliated with the Nazi party); it was common knowledge that those many who joined this organization often did so not out of conviction but in order to do the minimum possible to avoid losing their careers. This is not necessarily a mark of opportunism; someone formally on the wrong side of history can often do more good than someone who lays low, emigrates, etc.; had Heckmann emigrated, he couldn't have saved anyone's life essentially by hiding her at the observatory. Also, not everyone was able to emigrate; keep in mind that the United States of America had refused asylum to Anne Frank and her family⁵. (Frank later died in a concentration camp, probably of typhus.)

There were, of course, scientists, such as Lenard, who opposed Einstein and 'Jewish science'. (Einstein got his Nobel Prize for explaining Lenard's observations of the photoelectric effect.) Although some, such as Pascual Jordan[†] (one of the few to have made substantial contributions both to quantum mechanics and General Relativity), were unrepentant with regard to their

*Minkowski, nephew of Hermann Minkowski, had Jewish ancestry. Sensing what was to come, Baade, who had been at Mt. Wilson since 1931, helped Minkowski and his family to emigrate to California in 1935².

[†]I have often heard people speak of the 'Dshordan' frame, as opposed to the 'Yordan' frame, in gravitation theory, concluding that they don't know that he was German (though of Spanish ancestry) or don't know how German is pronounced.

political views (though Jordan remained a defender of Einstein and other Jewish scientists), most tried to continue their work despite the political situation, some realizing later rather than sooner the true evil of fascism. (Planck's son Erwin was executed for his part in the failed attempt to assassinate Hitler organized by Claus Schenk Graf von Stauffenberg.) Of course, many had no chance and were forced to emigrate, the effect perhaps best documented by a conversation between a politician and a mathematician. When asked by the minister of education Bernhard Rust whether it was true that his institute had suffered due to the exit of Jewish mathematicians, David Hilbert replied that the institute no longer existed⁶.

After two decades as director of the Hamburg Observatory, during which he was also vice-president (1955–1961) of the IAU, Heckmann became the first Director General (1962–1969) of ESO (headquartered in Hamburg for a while as a result) and, later, president of the IAU (1967–1970). He held an extraordinary IAU General Assembly in Poland to commemorate the 500th anniversary of the birth of Copernicus. Heckmann was a foreign member of many academies of science and astronomical organizations, received honorary doctorates from universities in many countries as well as prestigious astronomical medals, and was a major figure in international cooperation in astronomy^{7,8}.

Yours faithfully,

PHILIP HELBIG

Institut d' Astrophysique et de Géophysique (Bât. B5c)
 Université de Liège
 Quartier Agora
 Allée du 6 août, 19C
 B-4000 Liège 1 (Sart-Tilman)
 Belgium

helbig@astro.multivax.de

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To the Editors of 'The Observatory'

Chess-playing armchair cosmologists

I've often used Rees's description, mentioned in the Gerald Whitrow Lecture on 2019 February 8¹, of the observable Universe shrunk to the size of the Solar System. The interesting thing, though, is that the density would be within an order of magnitude or so of that of a neutron star, thus not extremely far removed from our experience. Of course, that demonstrates how empty the Universe is, mainly between stars and within atoms: the Hubble Deep Field,