

## 28th Texas Symposium on Relativistic Astrophysics



Contribution ID: 150

Type: Talk

### Lest we forget

Thursday 17 December 2015 11:20 (20 minutes)

Astrophysics, both the name and the subject, was born in the halcyon days of irrational international exuberance near the end of the 19th century, when there were 100's of international conferences in a decade and 10's of new international organizations being established. Those included the French-inspired Carte du Ciel and G.E. Hale's International Union for Solar Research. General Relativity; in contrast, came into being in 1915-16, in the darkest days of the Great War that had already put an end to the conferences and would soon abolish most of the organizations. Indeed an August 1914 eclipse expedition from Germany, which Einstein had asked to have a look for bending of starlight by the sun, was imprisoned in the Crimea almost immediately. As the war went on, Karl Schwarzschild, on active duty, worked out his spherically symmetric solution to the Einstein equations, then died of war-related pneumonia.

On the astrophysics side, Henry Moseley, who had just put the periodic table into proper order in 1913, died at Gallipoli in July, 1915 (and the Nobel Prize that surely should have been his went to Charles Barkla for 1917). Meanwhile, Paul Merrill learned to sensitize photographic plates for red and IR radiation (to penetrate haze during aerial reconnaissance), which plates he later used to discover Tc on stellar surfaces, thereby provided incontrovertible evidence that nuclear reactions were occurring in their interiors (plus, of course, convection).

A conference among the winning countries held in London in 1918 declared that previously-existing scientific cooperative agreements should be terminated and new societies, involving only those countries "at war with the Central Powers" be formed. And 1919 saw both the founding of the International Astronomical Union and the solar eclipse expeditions, organized by Eddington, which saw the bending of star light, at the predicted values which had doubled between Einstein's initial 1911 calculation and the definitive GR prediction of 1915-16.

Committee No. 1 of the IAU issued Relativity, under the presidency of Eddington himself and they voted themselves out of existence (under Levi-Civita) in 1925 apparently on the grounds that it had all been done. Indeed by then the "expected" gravitational redshifts had been reported in spectra of the sun (St. John 1923) and Sirius B (Adams 1925). Both were wrong. High energy astrophysics and cosmology (that is, more or less, applications of SR and GR) did not return to the IAU until 1970 in Brighton UK.

Neutral Switzerland and the Netherlands, whose status had been guaranteed under the 1648 Treaty of Westphalia, adhered to the Union only in 1923 (though de Sitter was a VP from 1922) and Germany in 1952, with the Astronomische Gesellschaft initially as the adhering organization for both East and West.

R. Gautier and M.G. Bakhuyzen (directors respectively of the Geneva and Leiden Observatories, had attempted to bridge the Great War gap in geodetic observations with the Restricted (meaning neutrals only) Geodetic Association, which then folded into the new Unions by about 1928.

**Primary author:** Prof. TRIMBLE, Virginia (University of California Irvine)

**Presenter:** Prof. TRIMBLE, Virginia (University of California Irvine)

**Session Classification:** IUPAP young astrophysicist awards