Low Resolution Spectroscopy of the Supernova 1986G Near Maximum Brightness

S. DI SEREGO ALIGHIERI, ST-ECF, ESO*

Being at La Silla shortly after the supernova 1986G was discovered, I had the opportunity to take two spectra before it reached maximum brightness and quasi simultaneously with ultraviolet spectra taken with IUE. My first spectrum (Fig. 1) was taken on May 7 at 03 : 56 UT with the Boller & Chivens spectrograph and CCD # 5 at the 2.2-m telescope, with a resolution of 10 Å. It shows the features typical of type I supernovae – e.g. the broad one at 6120 Å. The sodium D doublet at 5890/96 Å, which was so nicely resolved in the CASPEC spectra, is visible here in blend.

* Affiliated to the Astrophysics Division, Space Science Department, European Space Agency.

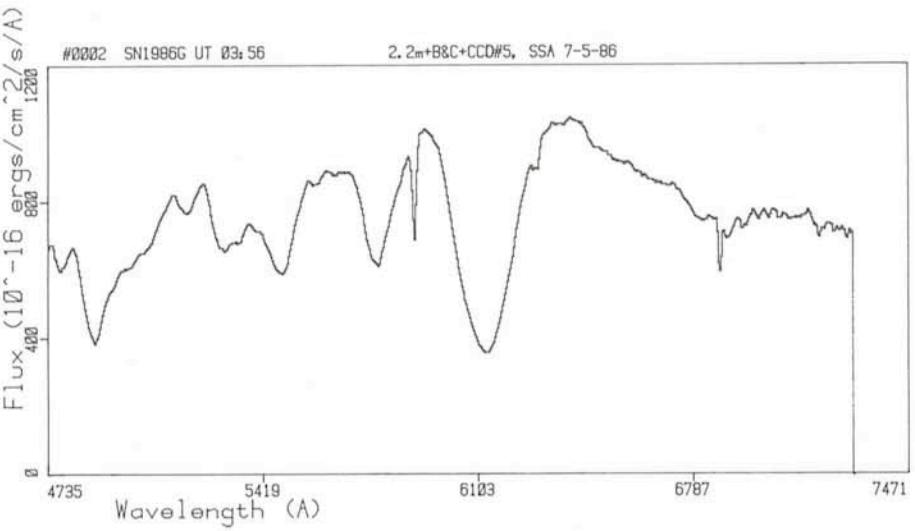

Figure 1: *The spectrum of the supernova 1986G taken on May 7 at 03 : 56 UT.*

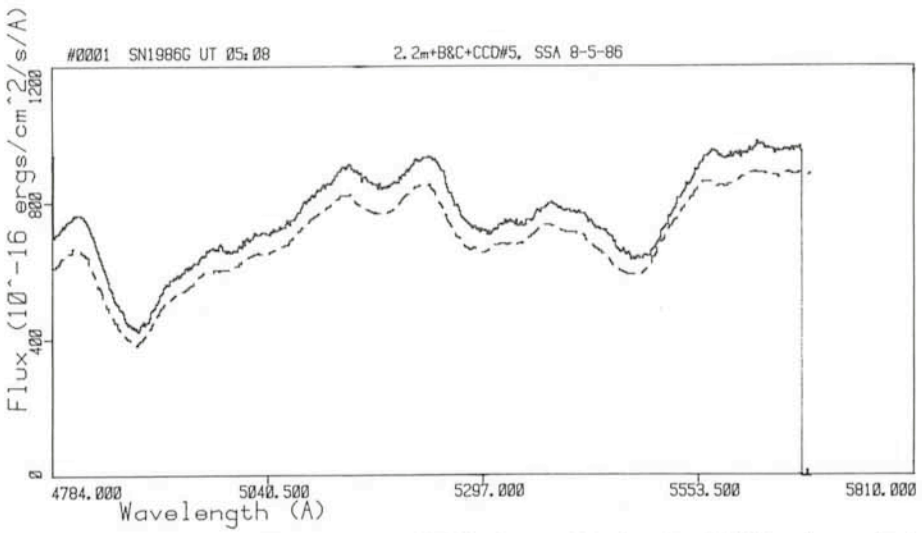

Figure 2: *The spectrum of the supernova 1986G taken on May 8 at 05 : 08 UT (continuous line) together with the one of the previous night (dashed line).*

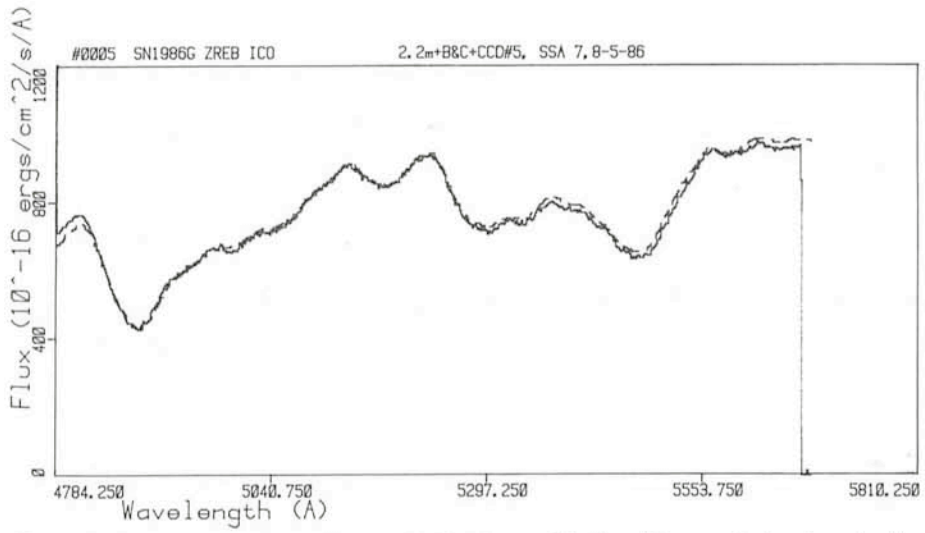

Figure 3: *The spectra of the supernova 1986G taken on May 7 and 8, corrected as described in the text.*

The second spectrum (Fig. 2) was taken on May 8 at 05 : 08 UT with the same instrumentation but a resolution of 3 Å. The comparison of the two spectra shows that the second is brighter – in agreement with the fact that the supernova was still rising – and is shifted slightly to the red. By applying to it an intensity correction of 0.11 magnitude and a velocity shift of 230 km/s, it overlaps very well to the spectrum of the previous night, as shown in Figure 3. The velocity shift can be interpreted as due to the fact that, as the emitting shell due to the explosion expands and gets thinner, we see deeper into it and therefore observe material moving towards us with smaller velocity. It would be interesting to follow this behaviour as the supernova reaches maximum brightness and beyond. I would therefore very much welcome collaboration with later observers to this end.

Tentative Time-table of Council Sessions and Committee Meetings in 1986

August 26	Finance Committee
October 3	Scientific Technical Committee, Venice
November 17–18	Finance Committee
November 18	Scientific Technical Committee
December 8–9	Observing Programmes Committee
December 11–12	Committee of Council

All meetings will take place at ESO in Garching unless stated otherwise.