Errata - April 23,1999

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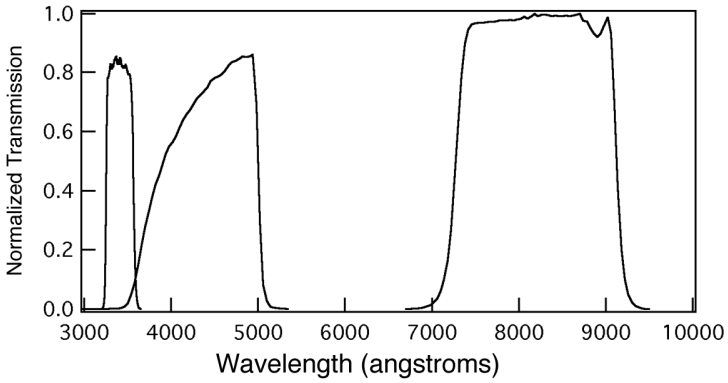
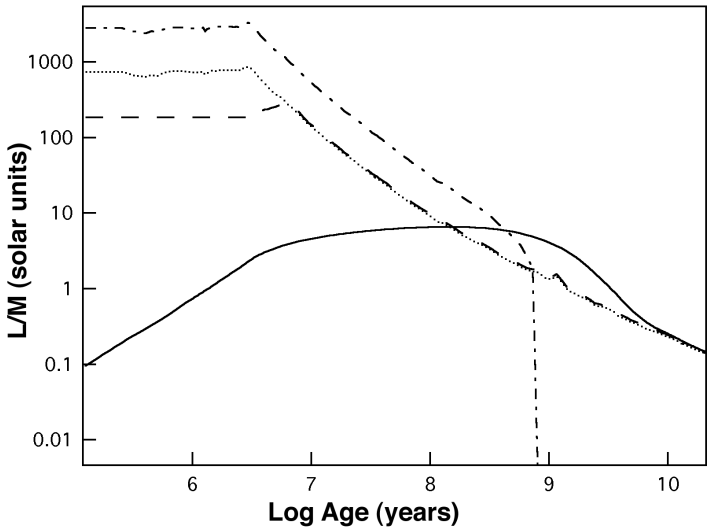
Nobody's perfect, and this thesis has a few errors as printed. They do not significantly affect it's content. The only major error appears in Section 7.3.

- Figure 7.5 — No legend appears. The open circles are Stage III, the closed circles are Stage IV.
- Table 7.1 — The tail lengths for Stage III and IV should be 17±10 and 31±18, respectively.
- Figure C.2 — The UH U-band filter is depicted, not the UH U′ filter. The correct figure appears below.



- Table 6.1 — The total magnitude for IRAS 01199-2307 should be 18.12, not 14.12. A future paper will contain a vastly more complete version of both this table and chapter.
- Figure 7.6 — The L/M ratios are too low by a factor of 85 (see below). This was due to a failure to account for the 4.8 magnitude difference between the bolometric magnitudes of Vega and the Sun. The correct figure appears below.
- Section 7.3 — There is an error in this section based on the erroneous Figure 7.6, which partially invalidates the argument made in the second paragraph of this section. The error in computation of bolometric luminosity *does not* propogate backwards into the discussions in previous chapters of the contribution of the star-forming knots to the high luminosity of the galaxy systems. The figure was made using a different computation than used in the previous chapters.

  As discussed in Chapter 2, the minimum mass needed to create an ultraluminous instantaneous starburst is approximately 10^9 solar masses, which is based on the maximum L/M ratio for an instantaneous burst being roughly 1000 (for the 0.1-125 solar mass case).



This is easily within the range (by a factor of 30) of the known molecular gas reservoir in ULIGs. However, this high value of L/M can only be maintained for a few million years. As the text correctly states, the ULIGs have an observed L/M of 85 (coincidentally, this is the amount that Figure 7.6 is off, so the vertical axis label "1" is actually the observed L/M for ULIGs). For any normal IMF, such a high L/M can still only be maintained for 10 Myrs, which is drastically less than the dynamical timescale. At this level the text is still correct. However, for a drastic truncation of the lower end of the IMF, the timescale can approach 50 Myrs, which is within a factor of a few of the dynamical timescale. However, it is noteworthy (and stated elsewhere in the text), that although the truncated IMF can sustain an ultraluminous burst for a significant fraction of the dynamical timescale, it undergoes luminosity evolution of nearly a factor of 100×. The lack of any such super-luminous (10^{14} solar luminosity) non-AGN objects argues against this situation.