

HW 2, #3

The spectrum of 3C279 is peculiar - it shows two very broad peaks.

- the first has a peak at $\approx 10^{12}$ or 10^{13} Hz

- the second " " " $\approx 10^{23}$ or 10^{24} Hz

The lower-frequency peak, if it were due to a simple single blackbody, would correspond to a temperature of

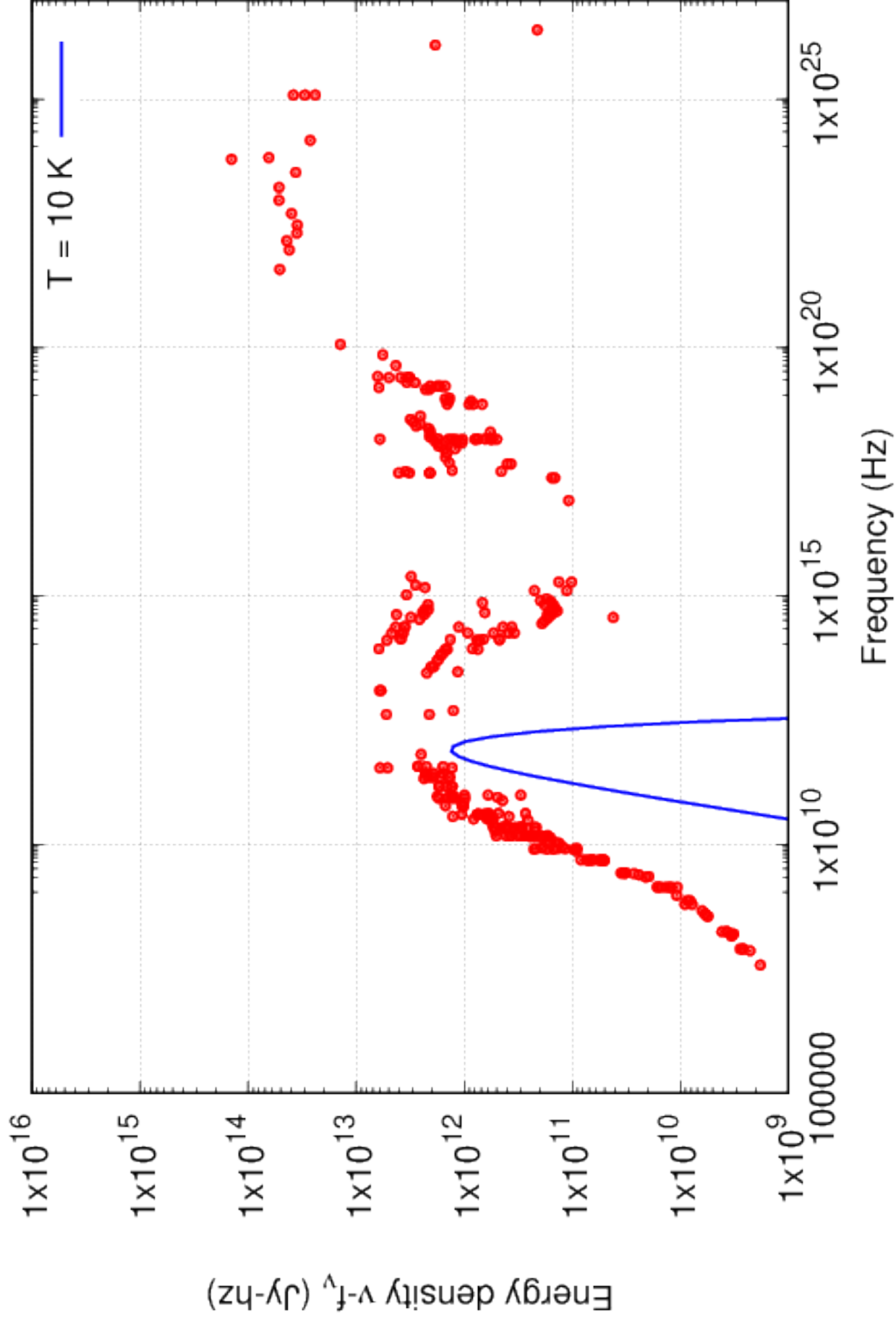
$$\text{If } \nu_{\text{peak}} = 10^{12} \text{ Hz} \rightarrow T \approx 10 \text{ K}$$

$$10^{13} \text{ Hz} \rightarrow \approx 100 \text{ K}$$

As the figure "b" shows, a single blackbody of temp 10 K (or 100 K, or any single temp) produces a much narrower peak.

But as figure "c" shows, a combination of blackbody spectra covering a wide range of temperatures can explain the observed spectrum.

Spectrum of quasar 3C279



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