

ASTR102 practice Mid-term answers

I

1. 10^4

2. (a) See sections 5.1 and 15.1 of textbook (4th edition)

(b) 23 km s^{-1} away from us

3. (a) $3.0 \times 10^{-10} \text{ J}$

(b) Same amount of energy as in (a)

(c) Nothing

4. Surface temperature: spectral type or colour

Radial velocity: Doppler shift of spectral lines

Distance: parallax if near enough, 'spectroscopic parallax' otherwise

Rotation: Doppler broadening of lines

Diameter: timing of eclipses if in eclipsing binary, model fitting otherwise

II

1. E 2. D 3. E 4. D 5. B 6. A 7. C 8. E 9. C 10. C 11. A 12. B 13. B 14. E 15. D

16. E 17. E 18. D 19. D 20. A

III

H, E, G, L, K, J, A, B, F, D, M, I, C, O, N

IV

See sections 16.2, 17.2, 17.3