

In-class activity 18

Assemble Your Group

1. Find your assigned group members, and sign in below.

Team member: _____

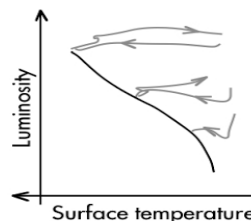
Team member: _____

Team member: _____

Team member: _____

Stellar Evolution

2. (Cf. Seeds and Backman, *ASTRO2*, Brooks/Cole Cengage Learning, 2014, pp. 234-235.) On the H-R diagram at right are paths illustrating the changes in luminosity and temperature of three different types of stars, as they evolve from protostars, to main-sequence stars (and possibly to giants/supergiants).



- (a) On the H-R diagram, clearly indicate which paths belong to:

- (1) Low-mass stars (0.08 to 0.4 solar masses);
- (2) Medium mass stars (0.4 to 4.0 solar masses);
- (3) Massive stars (8.0 to 100+ solar masses).

- (b) Decide which one of these types of stars has never been observed to leave the main-sequence, and briefly explain why.

Never leaves main-sequence stage: _____.

Explanation:

- (c) Rank the amount of time it takes for these stars to evolve along these luminosity and temperature tracks. Indicate ties, if any.

_____ (fastest)

_____ (slowest)