

## When World's Collide



1. According to the film, How fast are Bellus and Zyra moving toward the Earth?  
  
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2. How far away from the Earth are they reported to be at the beginning of the film?  
  
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3. Calculated how long it will take them to reach the earth from this initial position and compare this calculation with that reported in the film.  
  
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4. Bellus is described as being a "Giant" star that is a dozen times larger than the Earth. The radius of Bellus is about one tenth that of our Sun, and since volume is proportional to the cube of the radius of a body, it's volume would be about one-thousandth of our Sun's volume. (This is similar to the volume and mass of Jupiter.) Is it possible for a star to be that size and still be a star? Explain.  
  
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5. What is the differential Analyzer?  
  
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6. a. How many worker's are building the spaceship?  
b. How long do they have to build the spaceship?  
c. What is the approximate length and diameter of the spaceship?  
d. If the hull of the spaceship is one-foot thick, how many cubic feet of metal does the spaceship contain?  
  
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- e. If the metal was aluminum, how much would the spaceship alone weigh?  
  
+
- f. Would the weight of this metal be much greater than the weight of the 44 passengers?  
  
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7. Do you believe the fins of the spaceship are able to appreciably slow the spaceship down during

landing?

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8. Does Bellus look like a sun in the close-up view of it?

9. How does the spaceship change its orientation in outer space?

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10. In reality, could the change of a spaceship's orientation be accomplished as depicted in the film?

Why?

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11. What is the size of the planet Zyra relative to the planet Earth?

12. Note that the Moon has only 1/81 the mass of the Earth, (or presumably of Zra). Thus Zyra would exert 81 times the gravitational pull of the Moon on the Earth if they were both the same distance from the Earth. What effect would Zyra have on the Earth's Surface?

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13. What will happen to Zyra as Bellus moves out of our solar system?

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14. Since our Sun has a much greater mass than Bellus, might its gravitational attraction cause Bellus and/or Zyra to go into orbit like any other planet in our solar system?

15. If Both Bellus and Zyra stayed in our solar system, would two Sun's be a problem?

Why?

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16. Is it likely that astronomers would not have been able to plot the course of Bellus accurately until it was only 3 billion miles away, that is, near the edge of our solar system?

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17. The video depicts all engineers as being males and all the technicians as females. Is this sexist representation?

18. What would you have taken on the Spaceship?