

ASTR 2030 Black Holes Spring 2005. In class group Project 4. Mon Feb 21.

Scribe's name:

Names of other members of the group:

Andromeda "Under the Night"

Watch (in class) the clip from Andromeda "Under the Night". A synopsis of the clip is: All out war with the Nietzscheans has eliminated all human life, except for our hero Captain Hunt, who escapes by steering his ship, the Andromeda, into a black hole and becoming frozen at the horizon. 300 years later a salvage ship comes by, and, with much pulling, pulls the frozen ship off the horizon. For Captain Hunt, the 300 years has passed in a matter of seconds.

Comment on the physical plausibility of each of the following. Explain briefly but carefully what you think is right or wrong about the story, and why.

1. The black hole forms a binary system with the Nietzschean's sun.
2. From afar, the salvage ship glimpses the Andromeda frozen at the horizon of the black hole.
3. The salvage ship goes down to the horizon and grapples the frozen Andromeda.
4. Would it be possible for the Andromeda to remain outside the black hole, rather than at the horizon, without firing rockets?
5. The occupants of the salvage ship and of Andromeda experience apparently Earth-like gravity through much of the proceedings.
6. The salvage ship shakes.
7. Time seems to pass normally for the occupants of the salvage ship.
8. The salvage ship uses a huge amount of power to pull the Andromeda off the horizon of the black hole.
9. When Captain Hunt is returned to the outside world, 300 years has gone by, during which time only a few seconds passed for him.
10. What advice could you offer to the writer of the episode to make the story scientifically more accurate?