

5 THINGS TO KNOW ABOUT THE REAL ANDROMEDA

University of California Santa Cruz's professor of Astronomy and Astrophysics, Raja GuhaThakurta, gives us the real info on the galaxy far, far away

A QUESTION OF DISTANCE

1 The Andromeda galaxy, if you were travelling at the speed of light, takes about 2.5 million years to get [to], which is fine, that's not incompatible with the game, you just have to arrange it so that it can be done. The game doesn't have to be 100 per cent realistic. You do want to articulate just how much faster than the speed of light you would have to travel in order to get there in 600 years.

THE SCALE OF ANDROMEDA

2 The Andromeda galaxy itself is quite big. The bright part of the Andromeda galaxy, which is shaped like a disc - like a frisbee - is about 60,000 light years in radius. There is a much sparser halo of stars around Andromeda that's much bigger. That one has a radius close to 250,000 light years.

GALACTIC CANNIBALISM

3 It's looking more and more clear that the Andromeda galaxy has had a somewhat more violent history [than the Milky Way]. Violent in the context of a phenomenon called galactic cannibalism where galaxies grow at the expense of swallowing smaller galaxies. When this happens the existing big galaxy swallows the smaller galaxy, the smaller galaxy does some damage, disturbing the configuration of stars in the bigger galaxy. It looks like these cannibalism events have been bigger and more recent in Andromeda than in the Milky Way.

HOW WE MEASURE ANDROMEDA

4 We can measure distances of things in Andromeda - we can measure the chemical composition of stars in Andromeda, remarkable though that sounds. You can literally take the light of individual stars, spread them out into the colours of the rainbow, much more finely than a typical rainbow, into thousands of colours and from that you can measure the doppler shift of the star, how fast it's moving towards or away from us. You can use the spectrum to measure how strong the dips in the star are due to different elements in the atmosphere of the stars. The deeper the dips the more of that element it contains, so we can measure calcium, magnesium and iron in the atmosphere of the stars in Andromeda.

PLANET-BEARING STARS AND LIFE-BEARING PLANETS

5 Planet-bearing stars is easy to imagine, because we now know not just about the eight planets in the solar system but of thousands of planets. We understand our solar system and we understand a broad spectrum of planetary systems in the context of our system. Life is a much more difficult question because we only know about life here on earth and we don't completely understand it in context. By that I mean we don't understand the full diversity of lifeforms in the universe. The basic question that comes to mind, 'would we recognise all forms of life even if they were standing in front of us or presenting life to us?' That's an open question. I don't know if we would.



■ The star map returns but is now accessible from the bridge right alongside your pilot rather than stationed further back in the ship. It's worth noting that the Tempest is a good deal smaller than the Normandy, but appears to be of similar design.



The various settlers from the Nexus and other arks appear to have gone their separate ways or fallen out with the mission leadership, setting up their own bases and renegade groups that you'll likely have to confront throughout the game.