专八阅读:超大黑洞引力无穷，恒星不幸惨遭分身专四专八考试 PDF转换可能丢失图片或格式，建议阅读原文 https://www.100test.com/kao_ti2020/645/2021_2022__E4_B8_93_E5_85_AB_E9_98_85_E8_c94_645121.htm 天文学家说两个太空了望台首次提供有力的证据，证明了超级巨大黑洞的存在，恒星闯入黑洞强大的引力场里就被它拉伸、撕裂甚至部分吞噬。 很久以前就有理论推测会发生这种情况，但是从未得到过证实。 强烈的X射线爆炸引起天文学家们的注意，它发生在到离地球大约7亿光年的星系中心附近。国际天文学家小组认为恒星释放的气体造成了这次爆炸，当气体靠近RX J1242-11星系中心附近的黑洞时，它们的温度升高到几百万度。 天文学家们说和一个与太阳差不多大的恒星与另一颗恒“亲密接触”后偏离轨道而靠近黑洞。黑洞巨大的引力随后把恒星不断拉伸直到破裂，黑洞的引力估计是太阳引力的1亿倍。“这是大卫和歌利亚的决战，但是这次大卫输了。”德国马普外层空间物理学院的贡特尔哈辛格说。 黑洞对恒星的作用和月亮对地球上海洋的吸引作用一样，但是结果要猛烈的多。黑洞大约吞噬了这颗“倒霉的”恒星的百分之一，剩余的部分被抛向宇宙空间。 马普学院的同仁斯特凡尼科莫萨说：“这颗不幸的恒星只是‘闲逛’时不小心走错了路。”天文学家们利用美国国家航空航天局的钱德拉X射线天文台和欧洲航天局的XXM牛顿X射线天文台捕捉到了这一现象。类似的现象估计每1万年才会在一个典型的星系中发生一次。 天文学家们以前曾经看到过其他类似的X射线爆炸，但是从未能够确定爆炸发生在星系的中心，也就是黑洞潜伏的地方。新的观察结果同时显示，在黑洞周围发现了人们预想中可

能存在的典型X射线的特征。 哈佛史密森天文物理中心、钱德拉X射线天文台新闻处的科学家彼得埃德蒙兹说，1992年第一次观察到爆炸现象，尽管爆炸减弱了，但是一直可以看到。 Two space observatories have provided the first strong evidence of a supermassive black hole stretching, tearing apart and partially gobbling up a star flung into reach of its enormous gravity, astronomers said. The event had long been predicted by theory but never confirmed. A powerful X-ray blast drew the attention of astronomers to the event, located near the center of a galaxy about 700 million light-years from Earth. The international team of astronomers believe gases from the star, heated to multimillion-degree temperatures as they fell toward the black hole near the heart of galaxy RX J1242-11, produced the blast. Astronomers said a star about the size of our sun neared the black hole after veering off course following a close encounter with another star. The tremendous gravity of the black hole, estimated to have a mass 100 million times that of our sun, then stretched the star to the point of breaking. "This is the ultimate David versus Goliath battle, but here David loses," said Gunther Hasinger, of the Max Planck Institute for Extraterrestrial Physics in Germany. The effect is the same that the tug of the moon has on the Earth ’ s oceans, but with much more violent results. The black hole consumed an estimated 1 percent of the doomed star, flinging the rest out into space. "This unlucky star just wandered into the wrong neighborhood," said Stefanie Komossa, also of the Max Planck Institute. Astronomers used NASA ’ s Chandra and the European Space Agency ’ s

XMM-Newton X-ray observatories to capture the event. Similar events are estimated to occur just once every 10,000 years in a typical galaxy. Astronomers have seen other similar X-ray blasts before, but never were able to pinpoint them at the center of a galaxy, where black holes lurk. The new observations also revealed the characteristic X-ray signature expected of the surroundings of a black hole. The blast first was seen in 1992 and remains visible as it fades, said Chandra press scientist Peter Edmonds, of the Harvard-Smithsonian Center for Astrophysics. 