**Interstellar**

Cost of production : Interstellar grossed $188 million in the USA & Canada, and $487.1 million in other countries, for a worldwide total of $675.1 million against a production budget of **$165 million**. Calculating in all expenses, Deadline.com estimated that the film made a profit of $47.2 million.

Nominated and won Oscar:

|  |  |
| --- | --- |
| **Won** Oscar | Best Achievement in Visual Effects [Paul J. Franklin](http://www.imdb.com/name/nm0291518?ref_=ttawd_awd_1)  [Andrew Lockley](http://www.imdb.com/name/nm0516916?ref_=ttawd_awd_1)  [Ian Hunter](http://www.imdb.com/name/nm0402843?ref_=ttawd_awd_1)  [Scott R. Fisher](http://www.imdb.com/name/nm0279782?ref_=ttawd_awd_1) |
| **Nominated** Oscar | |  | | --- | | Best Achievement in Music Written for Motion Pictures, Original Score [Hans Zimmer](http://www.imdb.com/name/nm0001877?ref_=ttawd_awd_2) | | Best Achievement in Sound Mixing [Gary Rizzo](http://www.imdb.com/name/nm0729886?ref_=ttawd_awd_3)  [Gregg Landaker](http://www.imdb.com/name/nm0484414?ref_=ttawd_awd_3)  [Mark Weingarten](http://www.imdb.com/name/nm0918319?ref_=ttawd_awd_3) | | Best Achievement in Sound Editing [Richard King](http://www.imdb.com/name/nm0455185?ref_=ttawd_awd_4) | | Best Achievement in Production Design [Nathan Crowley](http://www.imdb.com/name/nm0189769?ref_=ttawd_awd_5) (production design)  [Gary Fettis](http://www.imdb.com/name/nm0275361?ref_=ttawd_awd_5) (set decoration) | |

Interstellar wining the Oscar (video) : <https://www.youtube.com/watch?v=w7JZCsSD92E>

Interstellar is based on: Scientific space studies and theory.

[](https://en.wikipedia.org/wiki/File:Kip_S._Thorne_EM1B8790_(24027017497).jpg)

[Kip Thorne](https://en.wikipedia.org/wiki/Kip_Thorne), theoretical physicist, served as scientific consultant and executive producer.

Theoretical physicist [Kip Thorne](https://en.wikipedia.org/wiki/Kip_Thorne) was a scientific consultant for the film to ensure the depictions of wormholes and relativity were as accurate as possible. "For the depictions of the wormholes and the black hole," he said, "we discussed how to go about it, and then I worked on the equations that would enable tracing of light rays as they traveled through a wormhole or around a black hole—so what you see is based on [Einstein](https://en.wikipedia.org/wiki/Albert_Einstein)'s [general relativity](https://en.wikipedia.org/wiki/General_relativity) [equations](https://en.wikipedia.org/wiki/Einstein_field_equations)."

Early in the process, Thorne laid down two guidelines: "First, that nothing would violate established physical laws. Second, that all the wild speculations… would spring from science and not from the fertile mind of a screenwriter." Nolan accepted these terms as long as they did not get in the way of making the movie. At one point, Thorne spent two weeks trying to talk Nolan out of an idea about a character traveling faster than light before Nolan finally gave up. According to Thorne, the element which has the highest degree of artistic freedom is the clouds of ice on one of the planets they visit, which are structures that probably go beyond the material strength that ice would be able to support.

[Astrobiologist](https://en.wikipedia.org/wiki/Astrobiology) [David Grinspoon](https://en.wikipedia.org/wiki/David_Grinspoon) criticized the dire "blight" situation on Earth portrayed in early scenes, pointing out that even with a voracious blight it would have taken millions of years to draw down the atmosphere's content of oxygen. He also notes that the ice clouds should have been pulled down by gravity.

[Astrophysicist](https://en.wikipedia.org/wiki/Astrophysics) [Neil deGrasse Tyson](https://en.wikipedia.org/wiki/Neil_deGrasse_Tyson) has explored the science behind the ending of *Interstellar*. He concludes that it is theoretically possible to interact with the past, and that "we don't really know what's in a black hole, so take it and run with it."

Theoretical physicist [Michio Kaku](https://en.wikipedia.org/wiki/Michio_Kaku" \o "Michio Kaku) praised the film for its scientific accuracy and has said *Interstellar* "could set the gold standard for science fiction movies for years to come." Likewise, Timothy Reyes, a former NASA [software engineer](https://en.wikipedia.org/wiki/Software_engineer), said, "Thorne's and Nolan's accounting of black holes and wormholes and the use of gravity is excellent."

**Wormholes and black holes**

In creating the wormhole and a [supermassive](https://en.wikipedia.org/wiki/Supermassive_black_hole" \o "Supermassive black hole) [rotating black hole](https://en.wikipedia.org/wiki/Rotating_black_hole) (which possesses an [ergosphere](https://en.wikipedia.org/wiki/Ergosphere" \o "Ergosphere), as opposed to a non-rotating black hole), Thorne collaborated with visual effects supervisor Paul Franklin and a team of 30 people at Double Negative. Thorne would provide pages of deeply sourced [theoretical equations](https://en.wikipedia.org/wiki/Theoretical_Physics) to the engineers, who then wrote new CGI rendering software based on these equations to create accurate computer simulations of the [gravitational lensing](https://en.wikipedia.org/wiki/Gravitational_lensing) caused by these phenomena. Some individual frames took up to 100 hours to render, totalling to 800 terabytes of data for the movie. The resulting visual effect provided Thorne with new insight into the effects of gravitational lensing and [accretion disks](https://en.wikipedia.org/wiki/Accretion_disk) surrounding black holes, which led to the publication of three [scientific papers](https://en.wikipedia.org/wiki/Scientific_papers).

Christopher Nolan was initially concerned that a scientifically accurate depiction of a black hole would not be visually comprehensible to an audience and would require the effects team to unrealistically alter its appearance. The visual representation of the black hole in the movie does not account for the [Doppler effect](https://en.wikipedia.org/wiki/Doppler_effect), which when added by the visual effects team, resulted in an asymmetrically lit black and blue black hole. Nolan didn't like the asymmetry caused by the Doppler effect and thought moviegoers wouldn't understand why it was asymmetrical, so the finished black hole ignored the Doppler effect. Nolan found the finished effect to be understandable, provided that he maintained consistent camera perspectives. "What we found was as long as we didn't change the point of view too much, the camera position, we could get something very understandable".

The portrayal of what a wormhole would look like is considered scientifically correct. Rather than a two-dimensional hole in space, it is depicted as a sphere, showing a distorted view of the target galaxy. The accretion disk of the black hole was described by Thorne as "anemic and at low temperature—about the temperature of the surface of the sun", allowing it to emit appreciable light, but not enough gamma radiation and X-rays to threaten nearby astronauts and planets.

Correct depiction of the [Penrose process](https://en.wikipedia.org/wiki/Penrose_process) was also praised.

Interstellar trailer(video): https://www.youtube.com/watch?v=zSWdZVtXT7E

Interstellar interview & backtages (video): <https://www.youtube.com/watch?v=65yI-QDprbg>

Interstellar soundtrack(audio): <https://www.youtube.com/watch?v=665ODhUiomE>.

Interstellar Review: http://www.imdb.com/title/tt0816692/reviews

Interstellar IMDb: 8.6/10 .