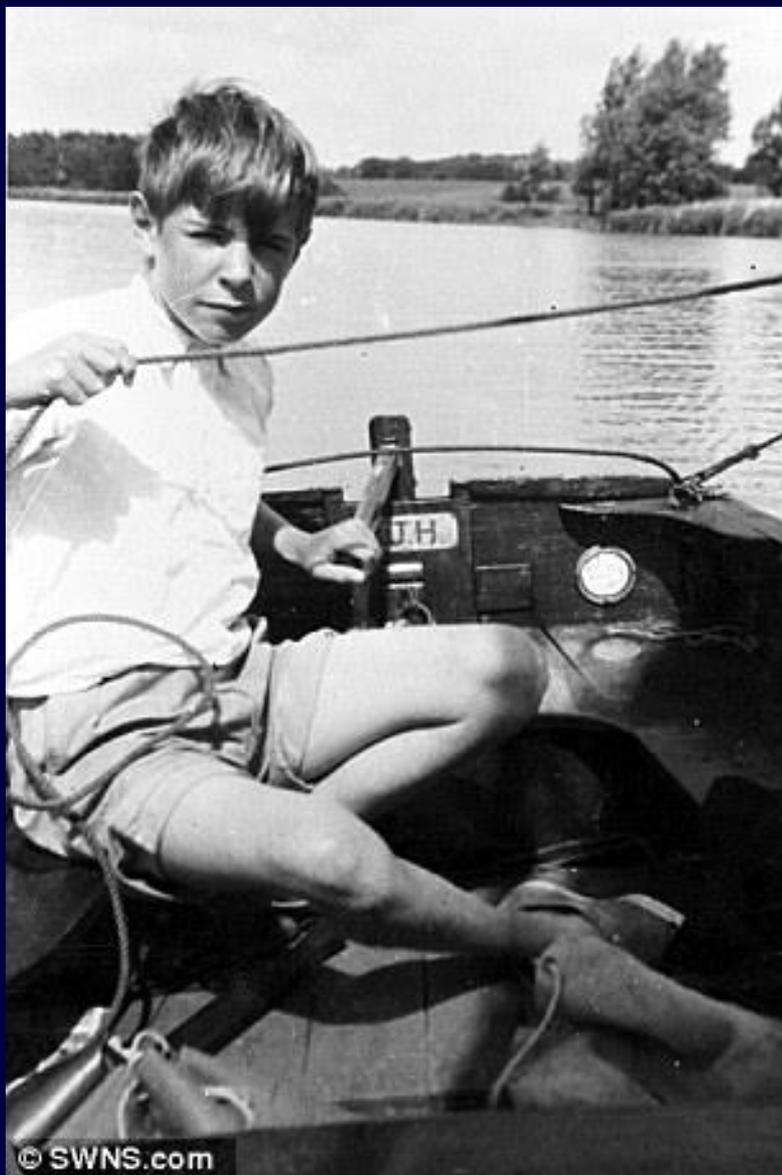


# 霍金及其遗产



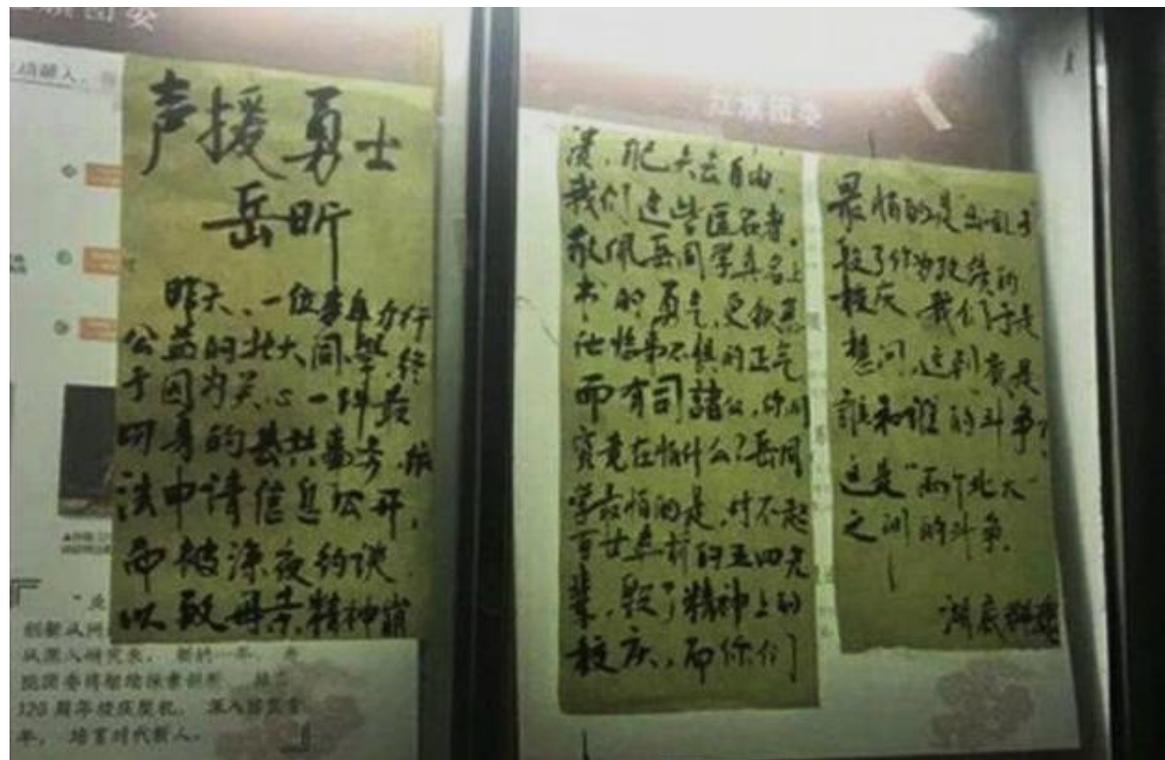
林磊

美国加州圣何西州立大学物理系  
中国科学院物理研究所  
中国科协中国科普研究所

# 蔡元培



# 北大精神



## 声援勇士 岳昕

昨天，一位事无不行  
公益的北大同学终于  
于因为关心一件最  
切身的公共事务，依  
法申请信息公开，  
而被深夜约谈，  
以致母亲精神崩溃。

创新从网  
从深入研究室，历时一年，在  
院党委和教授会指导下，共  
120周年纪念契机，深入普及宣  
传，培育时代新人。

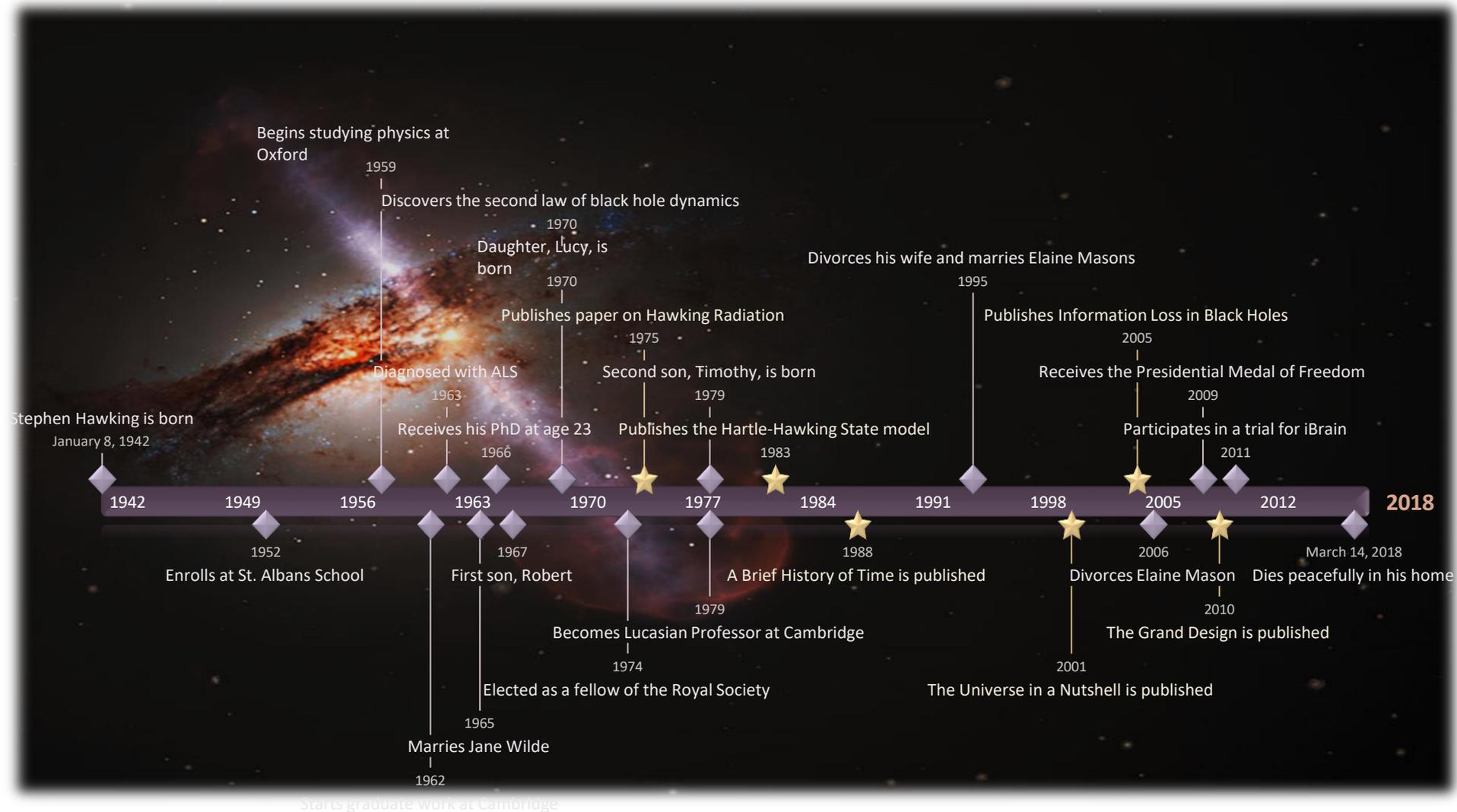
说，那北大自由  
我们这些匿名者，  
敢用岳同学真名上  
书，的勇气，更钦佩  
他临事不惧的正气  
而有司诸公，你们  
究竟在怕什么？岳同  
学最怕的是，对不起  
百廿五折的五四先  
辈，毁了精神上的  
校友，而你们

最怕的是出乱子  
毁了作为政绩的  
校友，我们于是  
想问，这究竟是  
谁和谁的斗争？  
这是“两个北大”  
之间的斗争。

湖底群像

# 香港





Best reference: [Stephen Hawking \(en.m.Wikipedia.org\)](https://en.m.wikipedia.org/wiki/Stephen_Hawking)

Also: Kitty Ferguson, *Stephen Hawking: His Life and Work* (Transworld, 2011)

# A brief history of Stephen Hawking

● Personal life ● Notable events ● Publications

**1942:** Born on **January 8** in Oxford, England, exactly 300 years after the death of astronomer Galileo

**1963:** At 21 years old, diagnosed with the degenerative nerve disorder ALS

**1965:** Earns his PhD with thesis titled "Properties of expanding universes"



**1973:** Publishes his first academic book, "**The Large Scale Structure of Space-Time**," with George Ellis

**1979:** Assumes post of Lucasian Professor of Mathematics, a position formerly held by Isaac Newton



**1988:** Publishes "**A Brief History of Time**" – more than 10 million copies have been sold since then.



**1995:** Marries his second wife **Elaine Mason**

**2009:** Given highest civilian honor, the Presidential Medal of Freedom

**2014:** Warns that creating an advanced **artificial intelligence** might be humanity's last and deadliest achievement.

1940

1960

1970

1980

1990

2000

2010

2018

**1962:** Receives his B.A. in Physics at University of Oxford and begins research in cosmology and general relativity at University of Cambridge

**1965:** Marries his first wife, Jane Wilde – the couple had three children



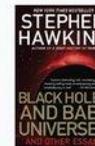
**1968:** Theorizes that black holes can evaporate through "**Hawking radiation**"

**1974:** Starts using wheelchair full-time.

**1985:** Loses ability to speak and begins using a machine to talk for him

**1993:** Appeared on 'Star Trek' as the only person to ever play himself

**1994:** Publishes "**Black Holes and Baby Universes and Other Essays**"



**2001:** Publishes "**The Universe in a Nutshell**"

**2013:** Publishes memoir, "**My Brief History**"



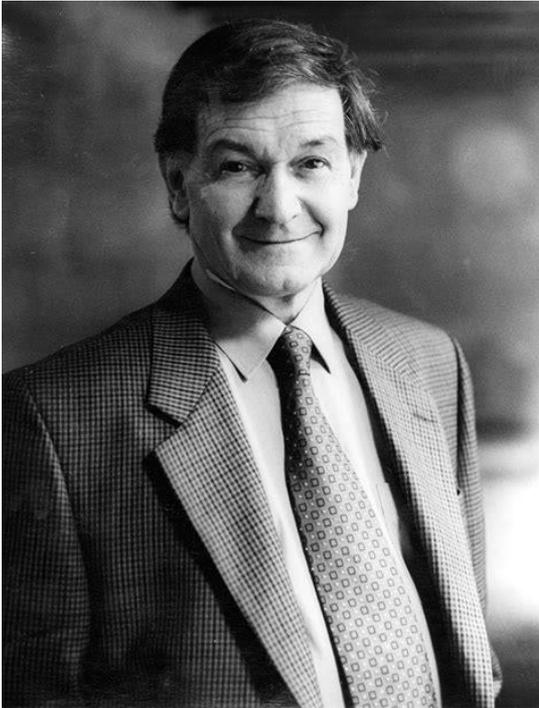
**2018:** Dies on **March 14** at the age of 76

学术

## Academic History

Year	Age	Event
1942	0+	Born
1960	18	BA, physics, Oxford Univ.
1963	21	Diagnosed with motor neuron disorder ALS
1966	24	PhD, Cambridge U., thesis "Properties of Expanding Universes"
1970	28	Publishes <b>Penrose-Hawking singularity theorems</b>
1973	31	Publishes "The Large Scale Structure of Space-Time" (with George Ellis)
1974	32	Publishes <b>Bekenstein-Hawking radiation</b> ; starts using wheelchair full-time
1979	37	Lucasian Professor at Cambridge U.
1983	41	Publishes <b>Hartle-Hawking State model</b>
1985	43	Loses ability to speak; uses machine to talk
1988	46	Publishes "A Brief History of Time"
1994	52	Publishes "Black Holes and Baby Universes and Other Essays"
2013	71	Publishes "My Brief History"
2018	76	Dies

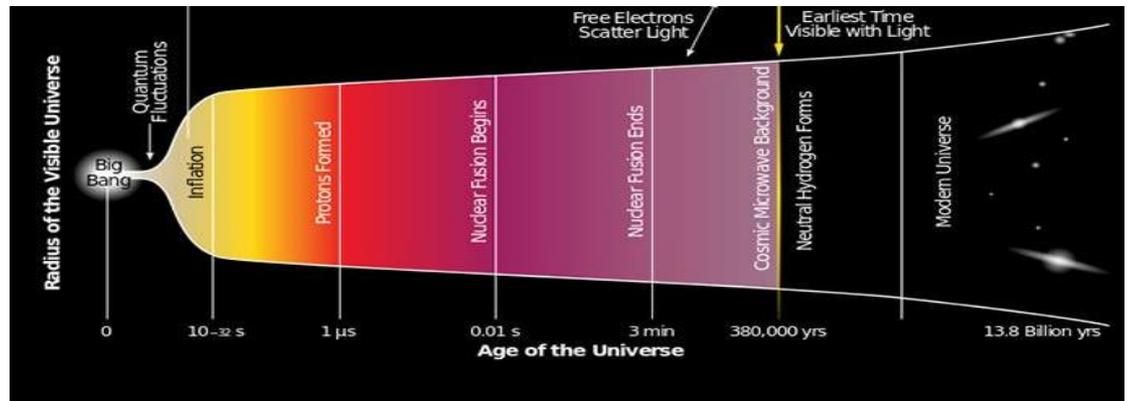
## Penrose-Hawking Singularity theorems



Roger Penrose

- 1937 Robert Oppenheimer and Hartland Snyder: General relativity implies existence of black holes
- 1965 Roger Penrose proves mathematically black holes are singularities
- 1970 Hawking and Penrose prove the Big Bang is a singularity

Hawking later, in *A Brief History of Time* (1988), stated that because of quantum mechanics "there was in fact no singularity at the beginning of the universe".







Jacob Bekenstein  
1947-2015

- 1972 Jacob Bekenstein assigns entropy to black holes and shows it is finite (thus starts Black Hole Thermodynamics)
- 1973 Zel'dovich and Starobinsky tell Hawking in Moscow that rotating black holes create and emit particles (according to quantum mechanics' Uncertainty Principle)
- 1974 Hawking argues for radiation's existence

$$S_{\text{BH}} = \frac{k_{\text{B}} \text{Area } c^3}{4G_{\text{N}} \hbar}$$

“Stephen wanted this equation inscribed on his gravestone.”  
(Andrew Strominger, *Physics Today* 18.03.14)

$S_{\text{BH}}$  = entropy of black hole (thermodynamics)  
Area = area of black hole  
 $k_{\text{B}}$  = Boltzmann constant (thermodynamics)  
 $c$  = velocity of light  
 $G_{\text{N}}$  = gravitational constant (general relativity)  
 $\hbar$  = Planck constant/ $2\pi$  (quantum mechanics)

## Hartle-Hawking State model for universe



James Hartle

1983 Wavefunction of the Universe (with James Hartle)

### No-boundary universe:

It proposed that before the Big Bang, time did not exist and the concept of the beginning of the universe is meaningless. The initial singularity of the classical Big Bang models was replaced with a region akin to the North Pole. One cannot travel north of the North Pole, but there is no boundary there – it is simply the point where all north-running lines meet and end.

Not much believable

# 功力

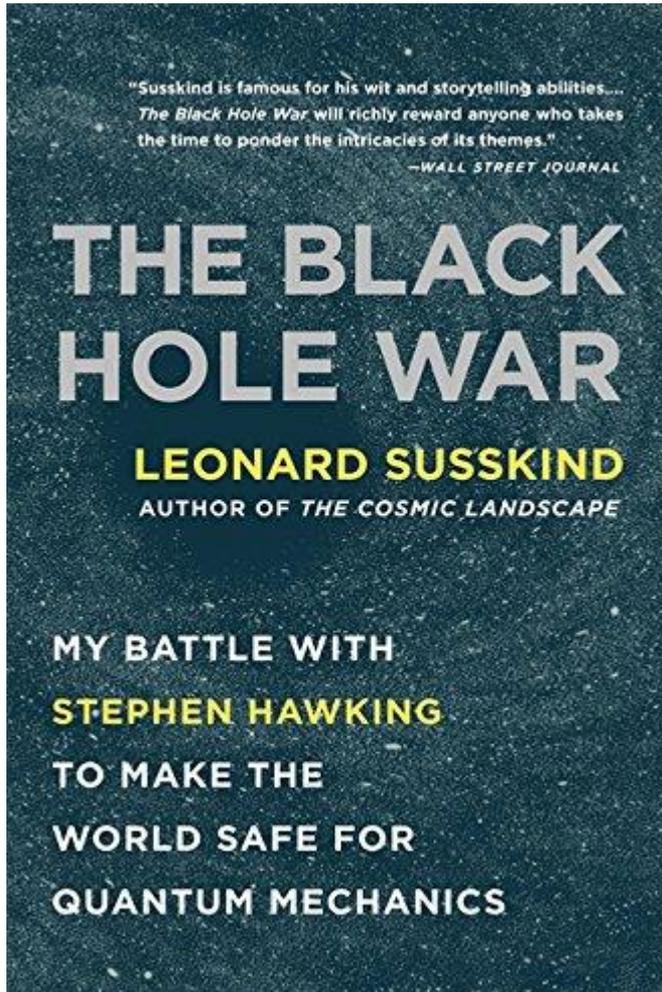
Hawking worked on topics initiated by others, with one exception:

He did initiate the use of **both** general relativity and quantum theory on black holes (and cosmology)—**a patchwork**.

- Why others didn't do that? Because all know that the two are incompatible with each other (and so results obtained could be wrong)

## Acknowledged reversals (and lose bets)

Year proposed	Proposal	Year reversed
?	About naked singularities (bet with John Preskill)	1997
1976/1981?	Black holes lose information (bet with John Preskill in 1997)	2004
2002/2008	Higgs boson would never be found (bet with Peter Higgs)	2012



2009

## The Black Hole War

### My Battle with Stephen Hawking to Make the World Safe for Quantum Mechanics

Review by **Don Page** (*Physics Today* May 2009)

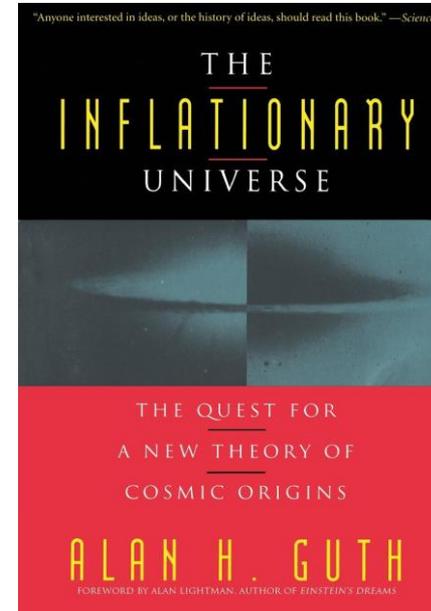
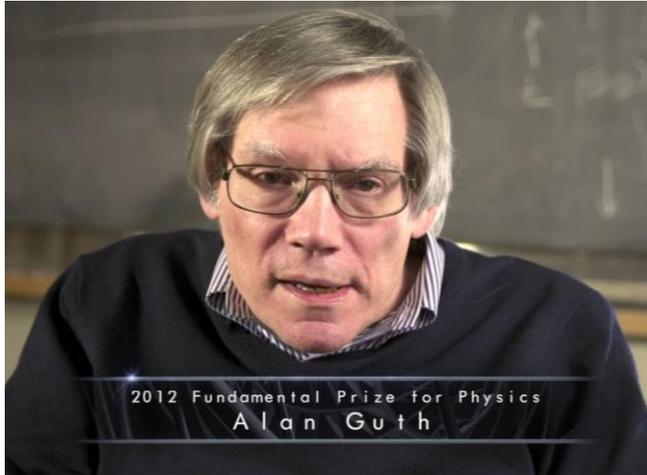
In 1974 Hawking discovered that black holes are not completely black but instead emit what is now called Hawking radiation. That means that black holes will lose mass and, presumably, eventually evaporate away. But what happens to the **information that falls into the black holes**?

Not long after his seminal discovery, **Hawking proposed that such information is permanently lost** from the universe when a black hole disappears.

Only a few were persuaded by **my 1980 objection** that **Hawking's result depended on the semiclassical approximation of effectively treating the black hole itself classically rather than quantum mechanically.**

**Hawking held out for 28 years**, but, as recounted in the book's epilogue, **in 2004 he made a widely publicized statement in which he agreed that information is preserved.**

## Unacknowledged reversal



1998

1982, Alan Guth first met Hawking in Cambridge at Nuffield Workshop on “Very Early Universe”. One month before, Paul Steinhardt and Guth checked Hawking’s calculation and find an error: Hawking underestimated a quantity “**by a factor of about  $10^4$ .**” “At Nuffield we had a chance to discuss it briefly with Stephen, but **he held rigidly to his calculation.**”

When it was Hawking’s turn to talk: “When **Stephen** reached the part of the calculation that we disagreed with, he inconspicuously did an about-face, **presenting the same result that we would have, without any indication that he had ever advocated anything different!**” (quotes from Alan Guth, *Physics Today* 18.03.14)

## 学风

He is bold and brilliant, but **not always rigorous enough** to fully persuade, and sometimes **seemingly driven by an intuition that can turn out to be quite wrong**.

-- Philip Ball (bbc.com 16.01.07)



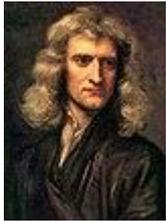
At Oxford, bored and unchallenged, he joined the University College Boating Club as a **coxswain**. (He “had a **daredevil way** of sometimes steering his boat through gaps so narrow that the shell returned to the boathouse with its blades damaged,” a fellow-boatsman recalled.)

-- Alan Burdick (*New Yorker*  
18.03.16)

霍金是一个“川普型”科学家（反复无常，不深思熟虑，有错不一定认）

# Lucasian Chair of Mathematics

Lucasian Chair of Mathematics is a mathematics (or [theoretical physics](#)) professorship in Cambridge University, founded in [1663](#) by Henry Lucas



#	Year of appointment	Name	Speciality	Tenure (yr)
1	1663	<a href="#">Isaac Barrow</a> (1630 – 1677)	Classics and mathematics	6
2	1669	<b>Isaac Newton</b> (1642 – 1726)	Mathematics and physics	33
3	1702	<a href="#">William Whiston</a> (1667 – 1752)	Mathematics	9
14	1903	<a href="#">Joseph Larmor</a> (1857 – 1942)	Physics	29
15	1932	<b>Paul Dirac</b> (1902 – 1984)	Physics	37
16	1969	<a href="#">James Lighthill</a> (1924 – 1998)	Fluid mechanics	10
17	1979	<b>Stephen Hawking</b> (1942 – 2018)	Theoretical physics and cosmology	30
18	2009	<a href="#">Michael Green</a> (born 1946)	String theory	6
19	2015	<a href="#">Michael Cates</a> (born 1961)	Statistical mechanics of soft condensed matter	current

# Decline of British Physics

Year	Nobel Physics Recipient
1904	Lord Rayleigh
1906	Joseph John <b>Thompson</b>
1915	William Henry Bragg & William Lawrence Bragg
1917	Charles Glover Barkla
1927	Charles Thomson Rees Wilson
1928	Owen Willians Richardson
1933	<b>Paul Dirac</b>
1935	James Chadwick
1937	George Paget Thomson
1947	Edward Victor Appleton
1948	Patrick Maynard Stuart Blackett
1950	Cecil Frank Powell
1951	John Douglas Cockcroft
1971	Denis Gabor
1974	Martin Ryle & Antony Hewish
1977	<b>Nevill Francis Mott</b> (1905-1996)
2003	<b>Anthony James Leggett</b>
2009	Charles K. Kao
2010	Andre Geim & Konstantin Noveselov
2013	<b>Peter Higgs</b>
2016	<b>F. Duncan M. Haldane &amp; John M. Kosterlitz</b>

Red = theorist

← 1979 Hawking appointed to Lucasian Chair

# Comparison with Newton and Einstein

Einstein	Newton	Age	Hawking
		20	BA, physics, Oxford U.
Academic Diploma at ETH		21	
	BA, Cambridge U.	23	
	Develops Calculus, Laws of Motion, Gravitational Law, Optics	23-25	
		24	PhD, Cambridge U.
PhD, University of Zurich; 4 breakthrough papers (Brownian motion, Photoelectric Effect, Special Relativity, $E = mc^2$ )		26	
	Lucasian Professor at Cambridge U.	27	
		28	Publishes the Penrose-Hawking singularity theorems
		32	Publishes "Bekenstein-Hawking radiation"
General Relativity		36	
		37	Lucasian Professor at Cambridge U.
		41	Publishes the Hartle-Hawking State model
Nobel Prize		42	

生活

# Life History

Year	Age	Event
1942	0+	Born January 8
1960	18	BA, physics, Oxford Univ.
1963	21	Diagnosed with motor neuron disorder ALS
1965	23	1 <sup>st</sup> marriage (Jane Wilde)
1966	24	PhD, Cambridge U.
1967	25	First son born
1970	28	Daughter born
1974	32	Starts using wheelchair full-time
1979	37	Second son born; Lucasian Professor at Cambridge U.
1985	43	Loses ability to speak; uses machine to talk
1988	46	Publishes "A Brief History of Time" (becomes rich)
1995	53	1 <sup>st</sup> divorce; 2 <sup>nd</sup> marriage (Elaine Mason)
2006	64	2 <sup>nd</sup> divorce
2018	76	Dies March 14

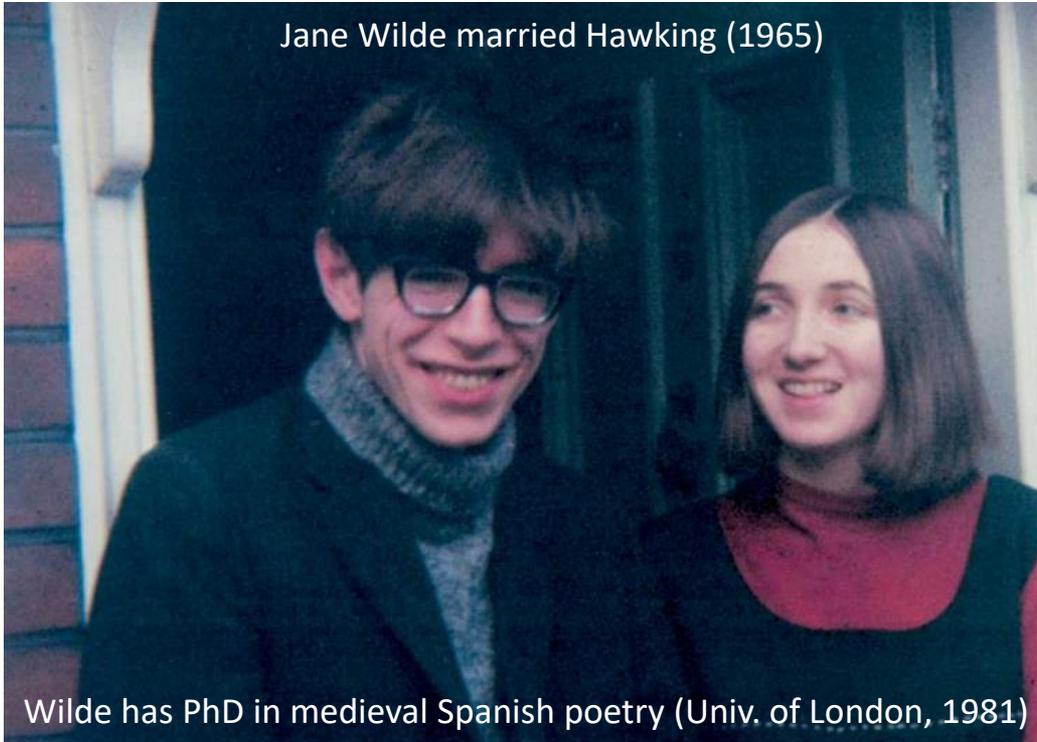
1989 Hire Elaine  
as nurse

1990 Hawking  
departs home

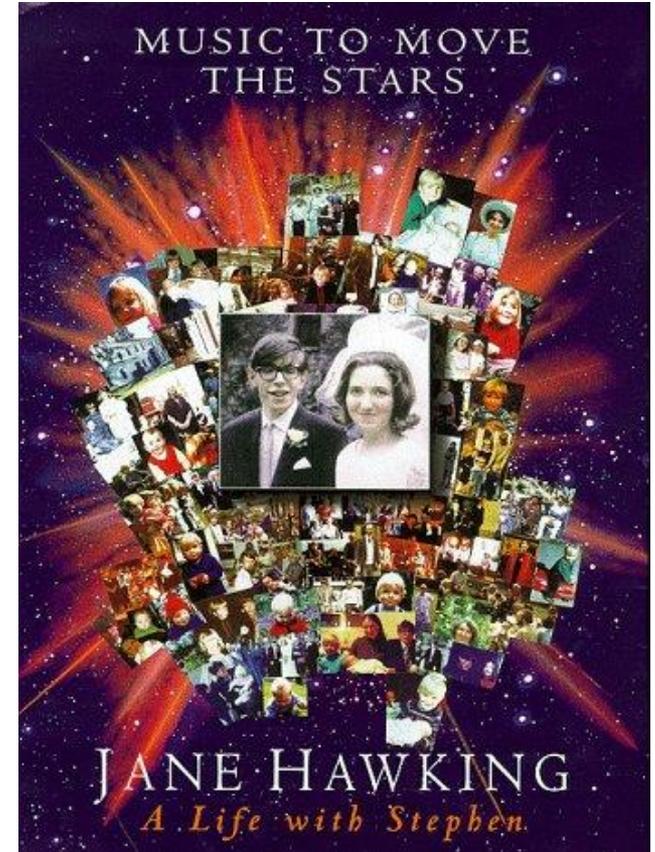
1992 Qiu  
Chengtong visits  
Hawking 2<sup>nd</sup> time



## 虐妻



**Stephen Hawking is a misogynist** (轻视女性者); and also, quite possibly, **a narcissist** (自恋者). You wouldn't know it from watching *The Theory Of Everything*...[T]he book this film was based on. It is a memoir by **Jane Wilde**, Hawking's wife of 30 years, and it is called *Travelling to Infinity* (2007). (**'Infinity', in this case, means 'divorce'.**) She wrote an **earlier, angrier memoir, *Music to Move the Stars*** (1999); but this is now 'revised'.



1999

The collapse of the high profile Hawking marriage, provoked by Stephen's affair with a nurse, is related in honest detail...

Jane knew Hawking might not live long when they married in 1965. The original prognosis was two years. Even so, they made a home, they travelled to conferences abroad, they had three children. She abandoned her scholarly ambitions — the medieval lyric poetry of the Iberian peninsula, if you care, and he didn't — to support his.

Her sacrifice deserves thanks, but no thanks came; when he became the youngest fellow of the Royal Society at 32, he made a speech, but he did not mention his wife. And why would he? She had become 'chauffeur, nurse, valet, cup-bearer, and interpreter, as well as companion wife'; that common ghost that haunts university cities — 'a physics widow'. (Jane notes that Albert Einstein's first wife, Mileva, named 'physics' as the co-respondent in her divorce proceedings.)

The cruellest thing was his refusal to discuss his illness. 'It was,' she writes, 'the very lack of communication that was hardest to bear.' He insisted on 'a facade of normality'; yet if he could not acknowledge his own suffering — he 'never' talked about the illness — how could he acknowledge hers?

A genius Professor Hawking may be — what do I know of physics? — but he was, if you believe his wife, and I do — a very bad husband indeed.

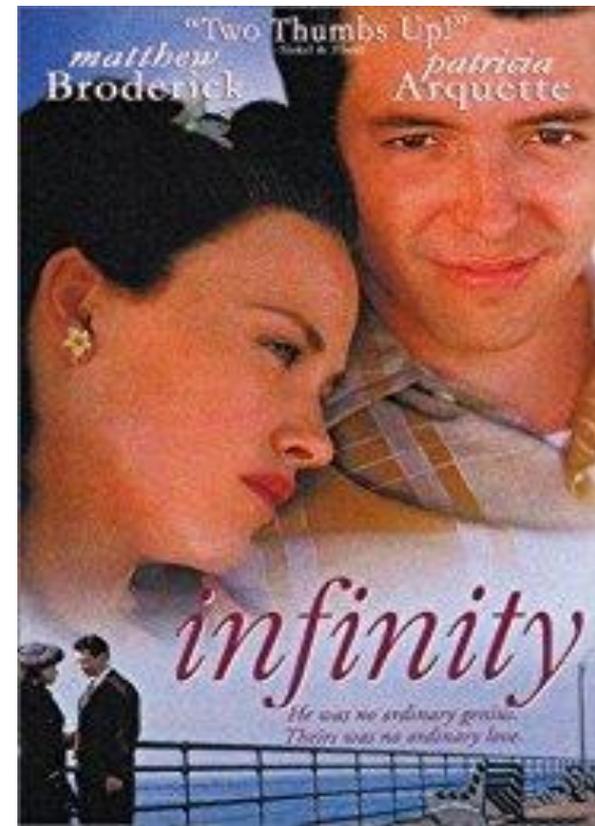
2002年、2006年我两次邀请霍金访华。1978年第一次见到他，那时我在做一个广义相对论的重要工作，解决“卡拉比猜想”的证明，当时广义相对论的学者都不大相信数学家有能力解决这个问题。霍金知道后写信邀我去解释研究，他听了我的思路后认为有可能。我去找他时见他很高兴的样子在笑。聊了八小时后他说请我吃好东西，他就爱吃好东西，但他自己吃得狼狈，因为吞咽不下去。

1992年第二次去剑桥见他时，六个护士轮流照顾他，她们争风吃醋。我请霍金去他喜欢的餐馆吃饭，他吃了不到一刻钟就开着电动轮椅回避着用机器打电话。他太太越坐越不高兴，跑过去吵架。原来霍金在电话里跟护士聊天。他太太眼泪流下来，他还是笑嘻嘻的。

--丘成桐(南方人物周刊 18.03.21)

Richard Feynman

1918-1988



1996

In 1942 Feynman married his high school sweetheart, Arline Greenbaum despite the knowledge that she was seriously ill with tuberculosis. This was an incurable disease at the time, and she was not expected to live more than two years. After marriage ceremony he took her to Deborah Hospital, where he visited her on weekends.

Feynman was working in the computing room of the Manhattan project at Los Alamos when he was informed that Arline was dying. He borrowed Fuchs' car and drove to Albuquerque where he sat with her for hours until she died on June 16, 1945.

In June 1945 Feynman, aged 27, lost his wife, Arline Feynman, aged 25. Next year, Feynman wrote a letter that was sealed and never opened until his death in 1988.

October 17, 1946

D'Arline,

I adore you, sweetheart.

I know how much you like to hear that — but I don't only write it because you like it — I write it because it makes me warm all over inside to write it to you...I want to tell you I love you. I want to love you. I always will love you.

I find it hard to understand in my mind what it means to love you after you are dead — but I still want to comfort and take care of you — and I want you to love me and care for me... We started to learn to make clothes together — or learn Chinese — or getting a movie projector. Can't I do something now? No. I am alone without you and you were the "idea-woman" and general instigator of all our wild adventures.

When you were sick you worried because you could not give me something that you wanted to and thought I needed. You needn't have worried. Just as I told you then there was no real need because I loved you in so many ways so much... You, dead, are so much better than anyone else alive...

I love my wife. My wife is dead.

Rich.

PS Please excuse my not mailing this — but I don't know your new address.

## 报应



Elaine Mason married Hawking  
(1995)

1995     Hawking divorces Jane and marries his nurse of 6 years, Elaine Mason

2006     Divorces Elaine in court

For years there have been shocking rumours of violence and abuse against the vulnerable scientist - mental as well as physical - supported by his own children no less.

In 2000, detectives launched an inquiry after Prof Hawking made a number of visits to Addenbrooke's Hospital, Cambridge, suffering from cuts and bruises, and another inquiry was opened in 2003 after his daughter Lucy rang police. Prof Hawking declined to explain how his injuries had come about. A number of his former nurses... alleged that over the years his wife inflicted a catalogue of injuries on the vulnerable scientist: fractured his wrist by slamming it on to his wheelchair; humiliated him by refusing him access to a urine bottle, leaving him to wet himself; gashed his cheek with a razor, allowed him to slip beneath the water while in the bath, ensuring water entered the tracheotomy site in his throat; and left him alone in his garden during the hottest day of the year so long that he suffered heatstroke and severe sunburn. (dailymail.co.uk 06.10.20)

# 暴力行为

## 凶器

He had been known to run his wheelchair over the foot of a student who caused him irritation.

-- Roger Penrose (theguardian.com 18.03.14)



# 孩子



Year	Age	Event	Children's profession
1965	23	Married Jane Wilde	
1967	25	Timothy (son) born	Software engineer, Microsoft, Seattle
1970	28	Lucy (daughter) born	Journalist; children book author
1979	37	Robert (son) born	Account manger; Loyalty executive, LEGO Group



A 2012 movie, based on a true story of a paralyzed student who earns a MA in poetry from UC Berkeley

科普

# Popular-Science Books

## Popular books

1. **A Brief History of Time** (1988)
2. **Black Holes and Baby Universes and Other Essays** (1993)
3. **The Universe in a Nutshell** (2001)
4. **On the Shoulders of Giants** (2002)
5. **God Created the Integers: The Mathematical Breakthroughs That Changed History** (2005)
6. **The Dreams That Stuff Is Made of: The Most Astounding Papers of Quantum Physics and How They Shook the Scientific World** (2011)
7. **My Brief History** (2013)

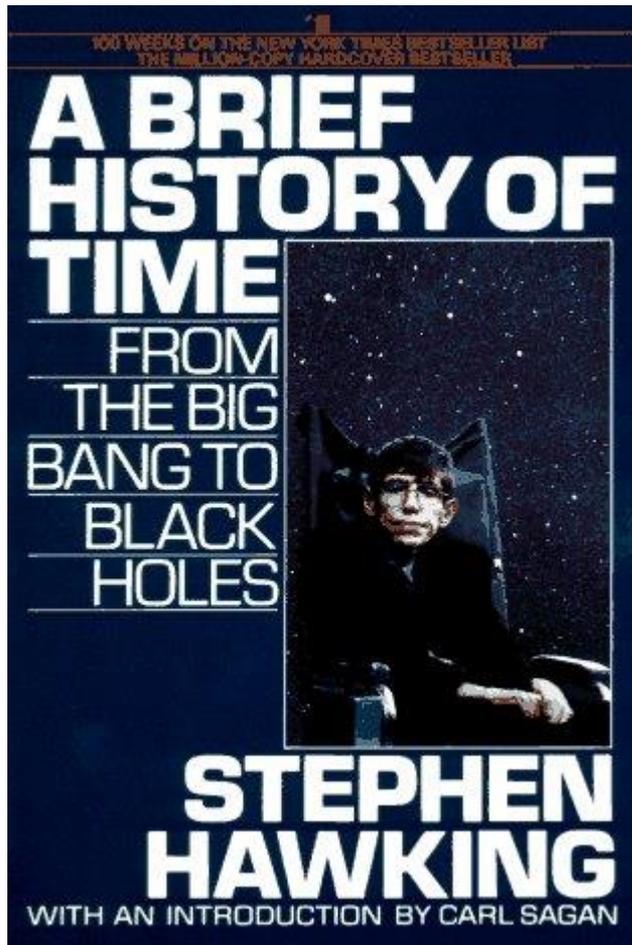
## Co-authored

8. **The Nature of Space and Time (with Roger Penrose)** (1996)
9. **The Large, the Small and the Human Mind (with Roger Penrose, Abner Shimony and Nancy Cartwright)** (1997)
10. **The Future of Spacetime (with Kip Thorne, Igor Novikov, Timothy Ferris and introduction by Alan Lightman, Richard H. Price)** (2002)
11. **A Briefer History of Time (with Leonard Mlodinow)** (2005)
12. **The Grand Design (with Leonard Mlodinow)** (2010)

## Forewords

13. **Black Holes & Time Warps: Einstein's Outrageous Legacy (Kip Thorne, and introduction by Frederick Seitz)** (1994)

## Adult books



1988

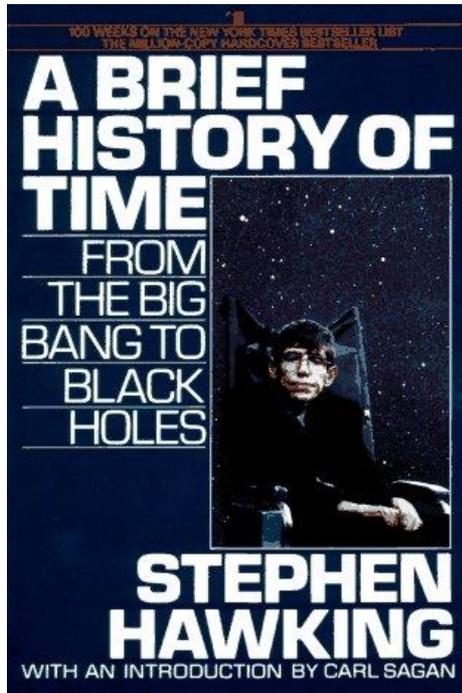
## The Universe in a Nutshell

Review by **Chris Impey** (*Physics Today* April 2002)

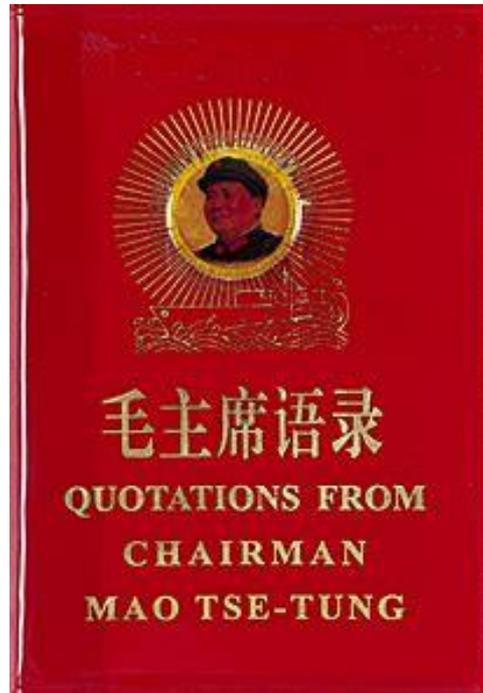
Thirteen years ago, Stephen Hawking turned the publishing world on its head with *A Brief History of Time*. **Written in part to help pay for his round-the-clock nursing care**, the book **sold more than 10 million copies and has been translated into 35 languages**. Despite its phenomenal success, *A Brief History of Time* is an uncompromising book, filled with difficult concepts, uninterrupted by diagrams or pictures, and **probably bought by more aunts and uncles (and unread by more nephews and nieces) than any other book in history**. Hawking himself has acknowledged that many people probably did not finish or understand it.

Beyond his reputation as a theoretical physicist, Hawking has a second component to his success. *A Brief History of Time* **marked his elevation into the public consciousness as an icon of science**. Heir to Newton and Einstein, and afflicted by a degenerative disease, **Hawking represents the struggle of a brilliant mind trapped in a wasting body**. **His personal tragedy sharpens the metaphor of science in which humans transcend their ephemeral status by trying to comprehend a vast and ancient universe**.

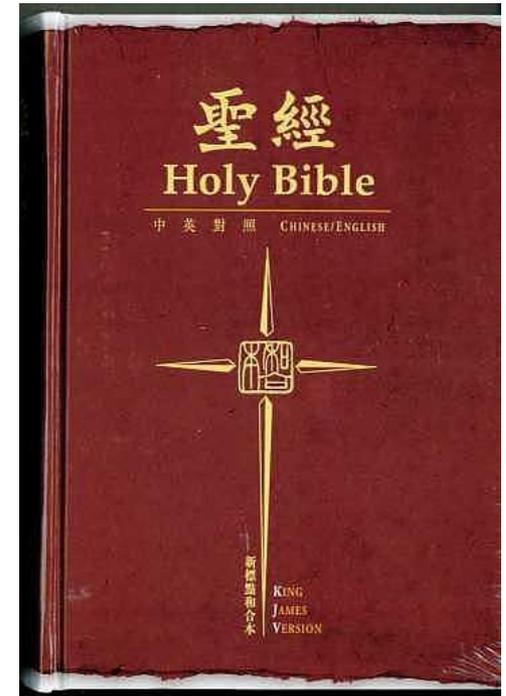
Copies printed



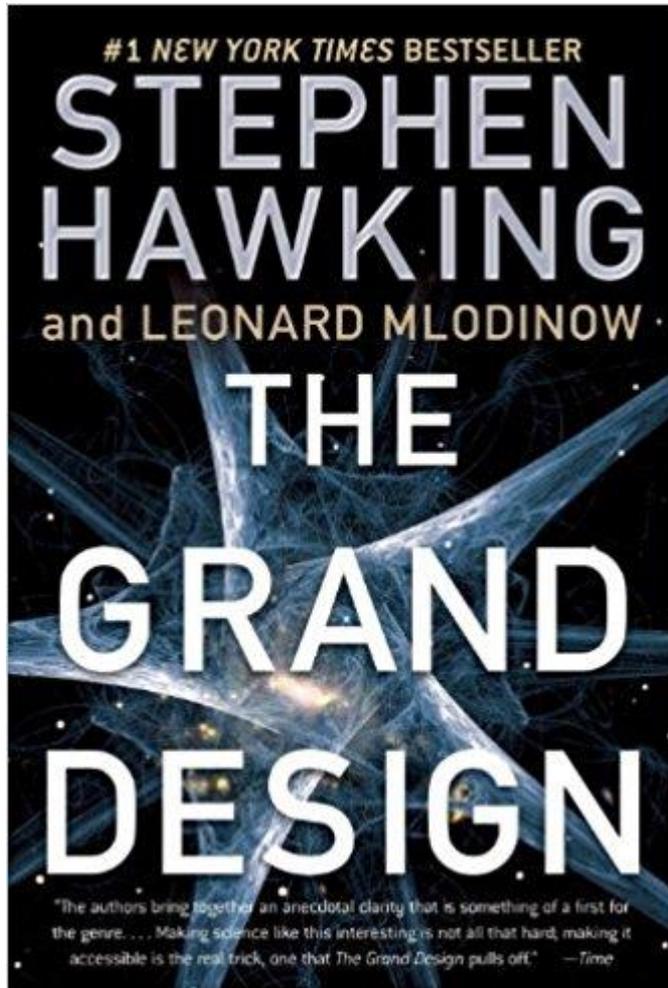
10 million



740 million (by 1968)



6000 million



2010

**Book:** Philosophy is dead and unable to answer the deepest questions, such as the question of creation, but M-theory may hold the key.

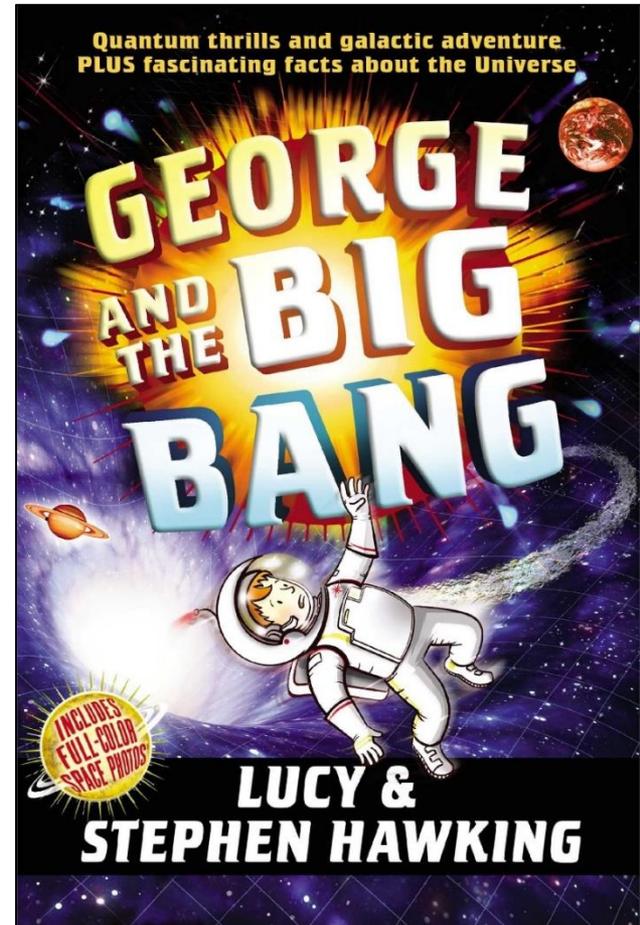
The book's assertion that physics has all the answers may be especially provocative in a time of growing intolerance toward science, but certainly it is not accurate.

-- Angela V. Olinto (*Physics Today* Jan. 2011)

## Children books

All co-written with his daughter Lucy

1. George's Secret Key to the Universe (2007)
2. George's Cosmic Treasure Hunt (2009)
3. George and the Big Bang (2011)
4. George and the Unbreakable Code (2014)
5. George and the Blue Moon (2016)

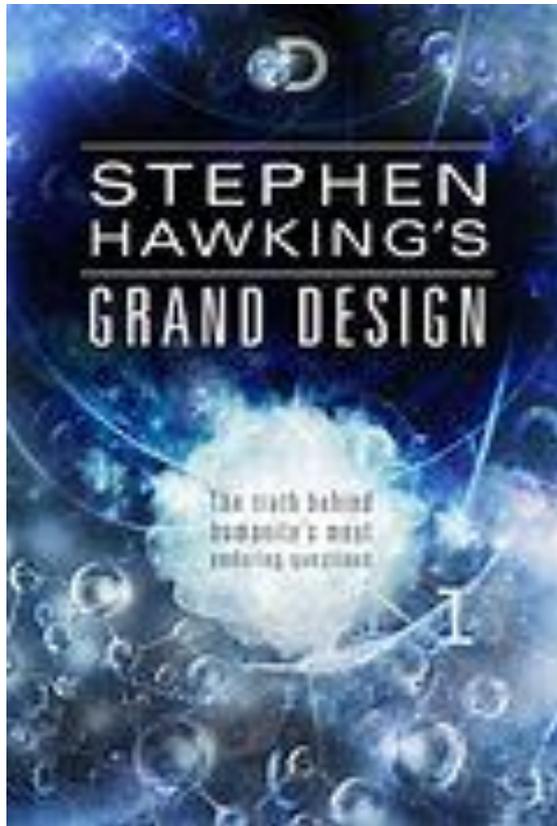


2011

## Science Popularization Films and Series

1. A Brief History of Time (1992)
2. Stephen Hawking's Universe (1997)
3. Hawking – BBC television film (2004) starring Benedict Cumberbatch
4. Horizon: The Hawking Paradox (2005)
5. Masters of Science Fiction (2007)
6. Stephen Hawking and the Theory of Everything (2007)
7. Stephen Hawking: Master of the Universe (2008)
8. Into the Universe with Stephen Hawking (2010)
9. Brave New World with Stephen Hawking (2011)
10. Stephen Hawking's Grand Design (2012)
11. The Big Bang Theory (2012, 2014–2015, 2017)
12. Stephen Hawking: A Brief History of Mine (2013)
13. The Theory of Everything – Feature film (2014) starring Eddie Redmayne
14. Genius by Stephen Hawking (2016)

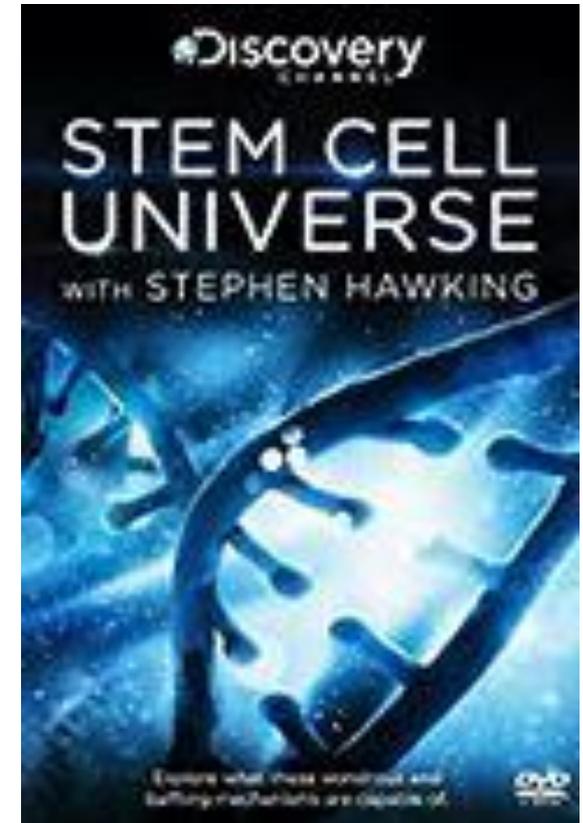
## Films and series



Stephen Hawking's  
Grand Design



Genius by Stephen  
Hawking



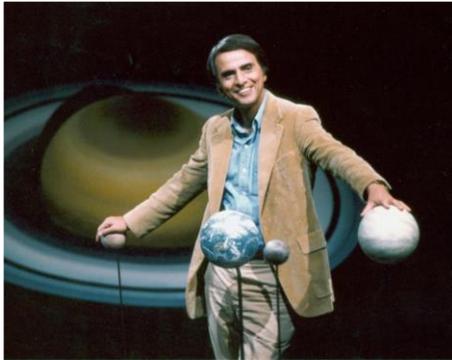
Stem Cell Universe with  
Stephen Hawking  
(2014 Documentary)



Giving a speech during the opening ceremony of the 2012 Paralympics in London

# Carl Sagan

1934-1996



Sagan with Viking lander model; he helps find landing site on Mars

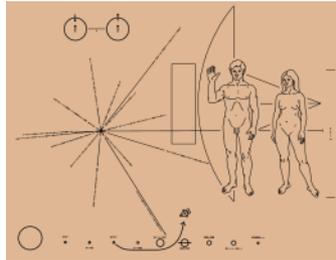


1980



1997

Hawking



1972+73

Advocate SETI  
1982

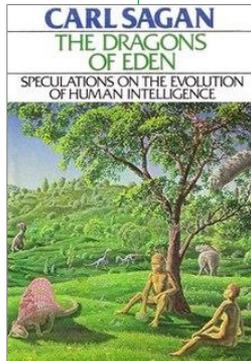
Sagan 54  
Hawking 46

A Brief History of Time  
1988

1977

1994

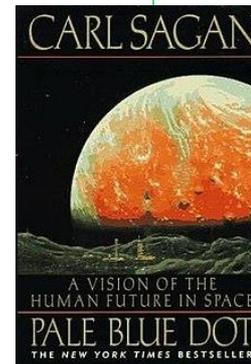
Sagan



1980  
Cosmos (TV series)

1985

Contact (book, movie 1997)



1996  
Aged 62

2018  
Aged 76

## Hawking in China



Hawking visits China 3 times  
(1985, 2002, 2006)

霍金：“中国的文化、食物我都感兴趣，  
但最感兴趣还是中国的女性，她们都很漂亮。” (June 2006)

霍金警告**停止天眼计划**。他说“如果外星人真的有朝一日到访地球的话，我想结果和哥伦布到达美洲大陆时的情景差不多，那对美洲的土著居民可不是什么好事。”

中国天眼刚刚建立完毕，立马就收到了来自遥远太空的微弱信号，这一消息惊动了霍金。霍金立马发言称，**千万不要回应!** (2017)



# 影视

## 霍金也是巨星

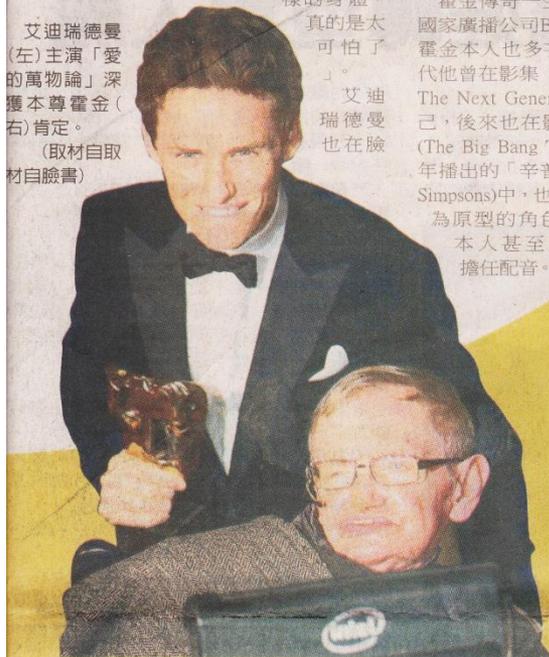
# 影視歌都沒缺席

記者董一寧／綜合報導

全球知名物理學家霍金（Stephen Hawking）驚傳病逝，他不只是在學術研究上成就卓著，包括電視、電影甚至音樂界，他也曾留下許多精采足跡。2014年電影「愛的萬物論」（Theory of Everything）改編他的前半生真實經歷，男主角艾迪瑞德曼（Eddie Redmayne）也因此片獲得金球獎、奧斯卡雙料影帝。2004年電視電影「霍金」（Hawking）當中，班尼迪克康柏拜區（Benedict Cumberbatch）也曾扮演霍金，他曾在訪問中表示「擁有一個那

樣的身體，真的是太可怕了」。

艾迪瑞德曼（左）主演「愛的萬物論」深獲本尊霍金（右）肯定。（取材自取材自臉書）



書發文悼念這位一代巨人，他表示「非常非常難過霍金逝世，這麼聰明的頭腦，這麼年輕就走了...」。

「愛的萬物論」改編自霍金第一任妻子潔恩回憶錄，從兩人在1960年代的劍橋大學相遇相戀開始，當時患有運動神經疾病的霍金被診斷只剩兩年生命，但潔恩仍堅持與霍金結婚，並且生下三個孩子。

期間霍金出版了「時間簡史」（A Brief History of Time）等著作，知名度越來越高，但病情也越加嚴重。最後霍金與私人看護伊蓮產生了感情，潔恩也另結新歡，兩人於90年代和平分手，另組家庭。

霍金傳奇一生多次被拍成紀錄片，如英國國家廣播公司BBC「霍金的宇宙」。甚至霍金本人也多次參與電視演出，90年代他曾在影集「銀河飛龍」（Star Trek: The Next Generation Season）中扮演自己，後來也在影集「宅男行不行」（The Big Bang Theory）演出。1999年播出的「辛普森家族」（The Simpsons）中，也出現以霍金

為原型的角色，霍金本人甚至自己擔任配音。▲霍金在美國最知名的動畫片「辛普森家庭」中就出現過五次。（取材自南方都市報）

### 2013年

英國Channel 4曾推出「霍金」紀錄片，這部紀錄片的編劇正是霍金本人，這是通過霍金自己的電腦敘述器講出來的自身經歷，名副其實的「霍金傳」。

### 2017年

為英國BBC錄製紀錄片「探索新地球」，本片尚未播出。

## 演員 霍金的重要時刻

### 1992年

霍金首次參演電影，在「星際迷航：下一代」中扮演自己，在宇宙飛船「企業號」上和牛頓、愛因斯坦打牌。「我把他們全打敗了，可惜警報出現，我沒拿到我贏的錢。」霍金非常喜愛「星際迷航」，他也是唯一無論是在電影版還是劇版的「星際迷航」中，都客串了自己，本色出演的一位「演員」。



▲霍金（中）在「星際迷航」中演自己。

（取材自南方都市報）

### 1998年

霍金在美國最知名的動畫片「辛普森一家」中就出現過5次，經常坐著會飛的輪椅解救女主角。他還在劇中有過配音。



### 2005年

美國紀錄片「異形星球」中，他和其他科學家們一起幻想宇宙和未來的情景。

### 2010年

「與霍金一起瞭解宇宙」算是霍金真正意義上的第一部作品，這部紀錄片深入淺出地介紹了很多宇宙的基本常識，期間霍金曾多次堅持對劇本作大幅修改。

### 2012年

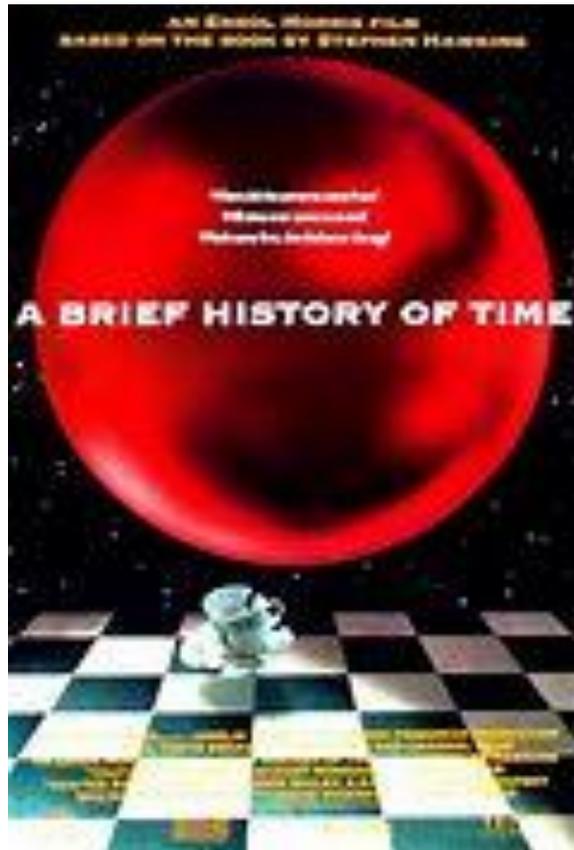
在美劇「宅男行不行」第5季第21集裡，驕傲自負的謝爾頓為了見他甘心穿上了女僕裝。霍金雖然癱坐在輪椅上無法動彈，霍金依然奉獻了他的演技，揚了揚他的眉毛，也念出了台詞。



▲霍金（左）演出美劇「宅男行不行」。

（取材自南方都市報）

## Biography



A Brief History of Time  
(1992 Biography)



Hawking  
(2013 Biography)

## Pop Culture



Simpsons  
(appeared  
multiple times)



The Big Bang Theory  
(since 2007)

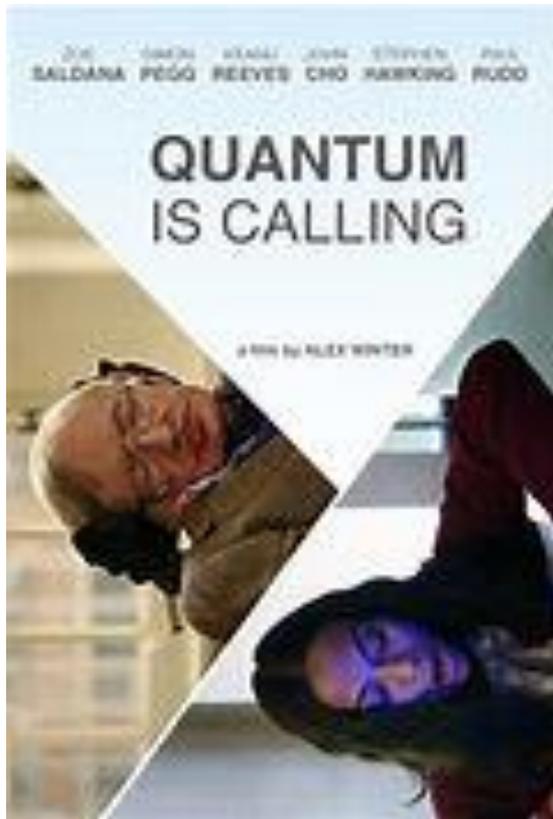


Star Trek: The Next  
Generation  
(1987-1994)



Futurama: The Beast  
with a Billion Backs  
(2008 Animation)

## Other



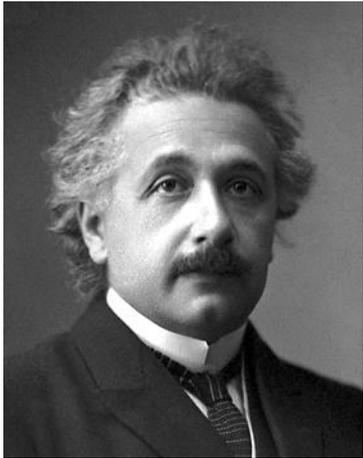
Quantum Is Calling  
(2016 Comedy)



London 2012 Paralympic  
Opening Ceremony

# 科学偶像

# 科学偶像的真空



Albert Einstein

1879-1955

It helps if one studies cosmology (esp. origin of universe—one of 3 big origin questions)

A Brief History of Time  
1988

Hawking dies  
2018

1919  
Solar eclipse  
expt. confirms  
general relativity



1955  
Einstein dies

Stephen Hawking

1942-2018



# 英国式炒作



1912 英国制定大宪章



“英国特色” 皇帝



真皇帝不是皇帝



## 两个炒作大师的会师

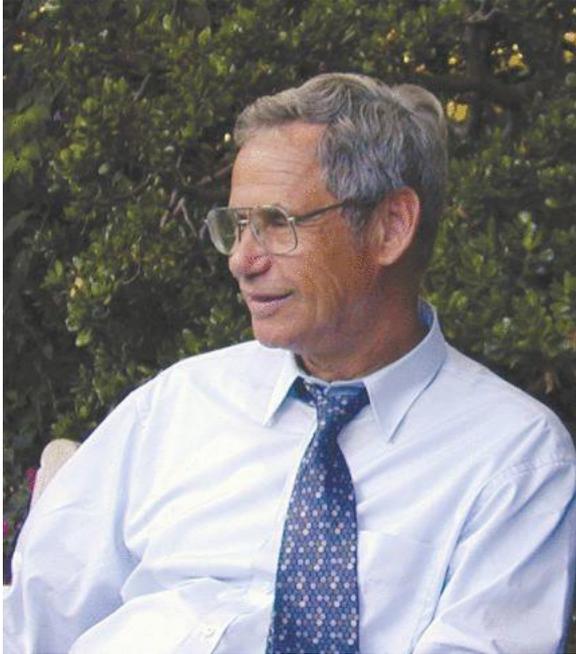


2014

# 没宣传 没人知

Philip Platzman

1935-2012



- 1956 BS MIT
- 1960 PhD Caltech (Gell-Mann, Feynman)
- 1960-2001 Bell Labs
- 1997 Arthur H. Compton Award
- 2002-2012 Paralyzed from neck down;  
still goes to Bell Labs office every day;  
produces 20 papers in last 10 years

Specialty: Condensed matter theory (polaron, x-ray scattering...)

身后

# 陰謀論瘋傳！霍金已過世33年？

他是傀儡？

「陰謀論」支持者認為，霍金早在33年前就過世。

(取材自英國獨立報)

●英國物理學家霍金 (Stephen Hawking) 日前病逝，在各界紛紛悼念之時，網路卻流傳「陰謀論」，指出「真正的霍金早在33年前就死了」，還提出五大證據；種種論點讓許多人開始懷疑輪椅上的霍金，其實是被操控的傀儡。

首先讓人質疑的是霍金外表的變化

霍金逝世前的外貌似乎比30多年前年輕，頭髮從棕色變成金黃色，下排牙齒比以前長。

其次，漸凍人發病後的平均存活時間是三到五年，而霍金1963年罹患漸凍症後，被醫生診斷出壽命只剩下兩年，但他與病魔搏鬥55年，多存活半世紀的時間。

再者，霍金第二段婚姻的結婚照竟出現兩種版本，兩版差異包括妻子梅森 (Elaine Mason) 的禮服換了，捧花也不一樣；陰謀論者認為，這是造假的開始，為了讓世人慢慢遺忘霍金的真正長相。

此外，罹患漸凍症的霍金喪失言語能力，主要是透過電腦與外界對話，需抽動臉頰肌肉，來掃描選擇螢幕上的訊息，而在某次的節目訪談中，霍金突然跳起

眼睛，似乎是睡著了，臉頰也沒抽動，但電腦還是繼續讀出他的訊息。「陰謀論」支持者指出，這是NASA天體物理學家事先編好內容，再輸入霍金電腦裡，而輪椅上的傀儡，只要裝出霍金的樣子即可。

「陰謀論」支持者認為，真正的霍金早已在1985年肺炎過世，比他的暢銷書「時間簡史」還早三年，之後的霍金早已被控制，這足以解釋為何霍金晚年開始預言人類滅亡，「這都是有心人士想利用霍金洗腦人類，藉此統治地球。」

(英國每日郵報)

霍金的長相被指變化極大，頭髮從棕色變成金黃色。(取材自MailOnline)

陰謀論者發現霍金與第二任妻子梅森的結婚照有兩種版本。(取材自MailOnline)



[Physics Today](#) (DOI:10.1063/PT.6.4.20180314a **14 Mar 2018** in [People & History](#))

## Stephen Hawking (1942–2018)

Colleagues remember the leading cosmologist, whose influence expanded beyond the physics community.

### Andrew Grant

1. Don Page (*University of Alberta, Hawking's student*)
2. [Marika Taylor](#) (*University of Southampton, Hawking's student*)
3. John Preskill (*Caltech*)
4. [Thomas Hertog](#) (*KU Leuven, Hawking's student*)
5. George Ellis (*University of Cape Town*)
6. [Alan Guth](#) (*MIT*)
7. William Unruh (*University of British Columbia*)
8. [Andrew Strominger](#) (*Harvard University*)

霍金到底是个怎样的人呢？他是一个神话，一个当代最杰出的物理学家，一个科学巨人，一个挑战命运的勇士。

**Christopher Johnston** August 9, 2017

Everything these scientific people do are mostly THEORY. Meaning it is not proven. It is a thought. I fail to see why these people are so famous without ever proving anything.

**jim m** March 14, 2018

These arrogant scientists getting awards for coming up with way out ideas that may or may not be true... and then acting like they're brilliant for their perhaps never to be proven opinion. I've seen how these people come to convenient conclusions based on things no honest person would accept. — Shameful — the people that support this nonsense are just as dishonest and egotistical.

**blade** March 15, 2018

The value of a theory without good marketing and devoted followers would not be enough to buy a cup of coffee.

**Lisa Gilmer** March 16, 2018

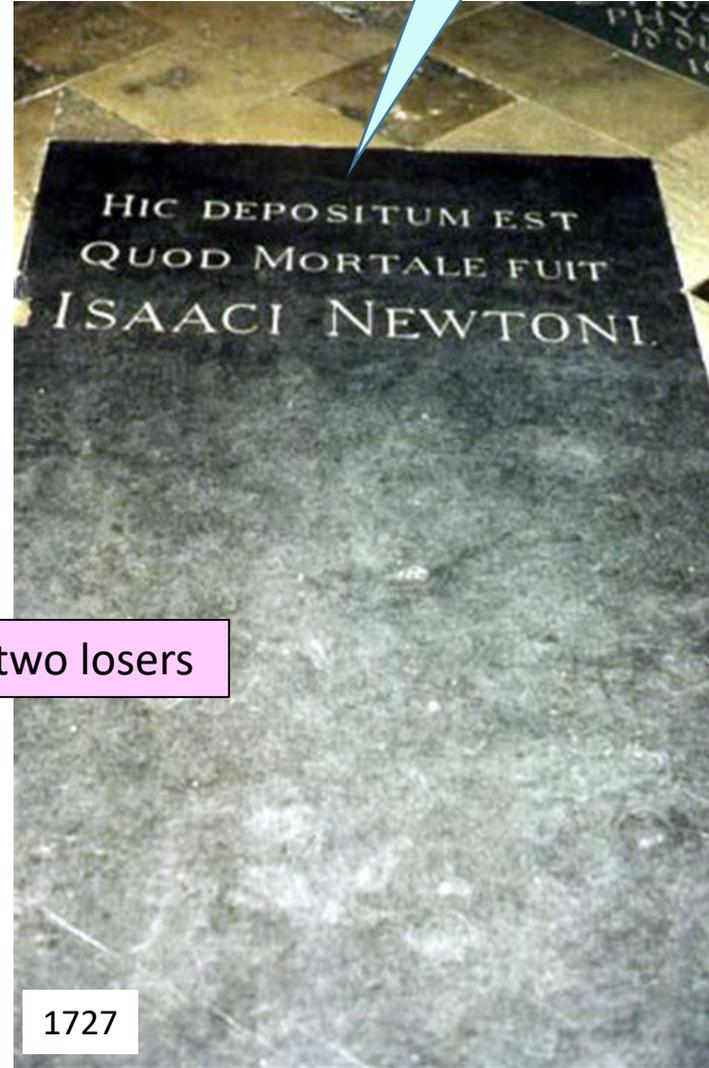
So basically he came up with some interesting ideas, but actually didn't accomplish anything.

Ashes to be buried in Westminster Abbey



Funeral at Great St. Mary's Church, Cambridge, 18.03.31

新来的谁呀?



The two losers



聽說是姓霍的

1882

1727

# The fitting resting place



## How much money Hawking left behind

霍金及其遗产

Hawking and His Legacy



**How much is Stephen Hawking worth? \$20 Million**

**How did Stephen Hawking earn his money?**

- *A Brief History of Time* sold at least 10 million copies
- Cash Prize for Special Fundamental Physics Prize (2012): \$3,000,000

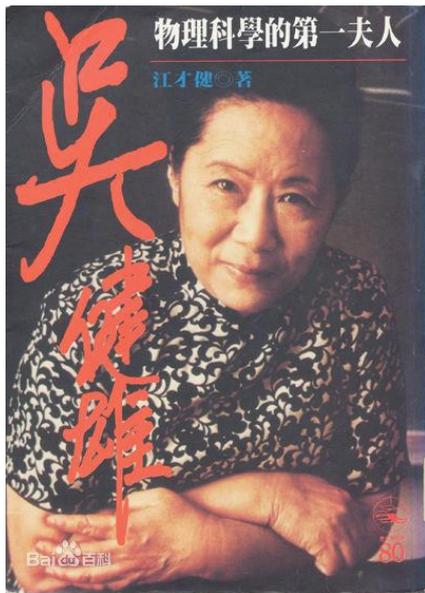
# 科学史与科学传播

# 科学史

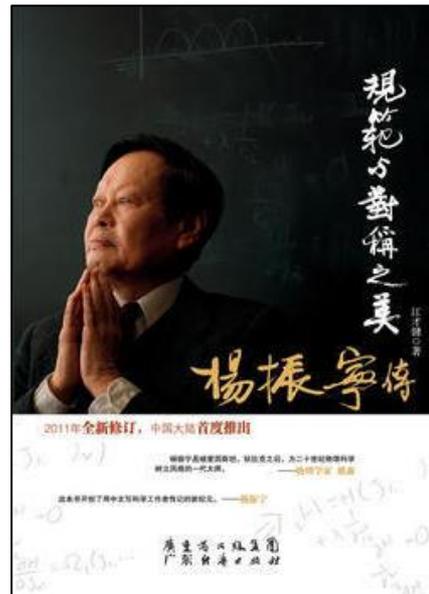
- History dept.: ancient history, modern history, contemporary history
- Literature dept.: ancient literature, modern literature, contemporary history

And so, a **Science History dept.** should have contemporary science history, for 2 reasons:

- Preserve historical materials for future science historians
- Recent research experiences/history will help current scientists in promoting **innovation**



1996



Two early examples by 江才健

For a dept. in China that focuses on **Western** science history, one can start a program in preserving the science history of **overseas Chinese scientists** (which is hard for foreigners to handle without knowing Chinese language and culture). Oral history, manuscripts preserving, books written are all possible methods.

Oral history is one method already used in China for Chinese scientists.

# 科学传播

- One basic aim of Science Communication (or Kepu) is to propagate the scientific spirit to the public.
- The most important part of scientific spirit is to get to the bottom of things (what actually happened).
- The existence of science icons is good (if it is genuine).
- Should kepu people just accept everything handing down from the scientists and media and passing it to the public? Or, is the kepu community a learned entity capable of independent thinking and judgment?

Plato is my friend,  
Aristotle is my friend,  
but my greatest friend is truth.

— Isaac Newton

# 总结

- 霍金的一生绝对是精彩的一生, 最大贡献是活下去的意志。
- 有“绝症”, 别放弃, 可能有奇跡
- 有强大的宣传, 可以把坐轮椅的“一流”科学家炒作到天才
- 科史人和科普人有责任揭露炒作吗? 为什么?

最后:

女博士嫁男物理博士, 三思!

听说过“物理寡妇”吗? 除非 ...

(男博士娶女物理博士, 亦然!)

## 霍金及其遗产

林磊

美国加州圣何西州立大学物理系

**霍金（1942-2018）**，剑桥大学讲座教授、天体物理学家、影视演员、科普作家。本讲演将就霍金的专业成果和生活作出回顾、分析、评论，说明霍金现象背后的个人、组织、社会因素，提出与科学史和科学传播有关的一些基本问题。炒作是本讲演要讨论的一个中心议题。

**林磊**，香港大学（一级荣誉）学士、哥伦比亚大学博士、加州圣何西州立大学教授和杰出服务奖获得者。自改革开放始，在中科院物理所工作六年。发明了碗形液晶、活性行走和两个多学科：历史物理学及人科。国际液晶学会创始人和两套英文丛书（《人科》、《偏序系统》）创立人兼主编。发表180多篇论文和出版17本书，包括《艺术》（2011）和《人文学、科学、人科》（2018）。目前研究哲学、文理融合、创新。电邮：[lui2002lam@yahoo.com](mailto:lui2002lam@yahoo.com)。