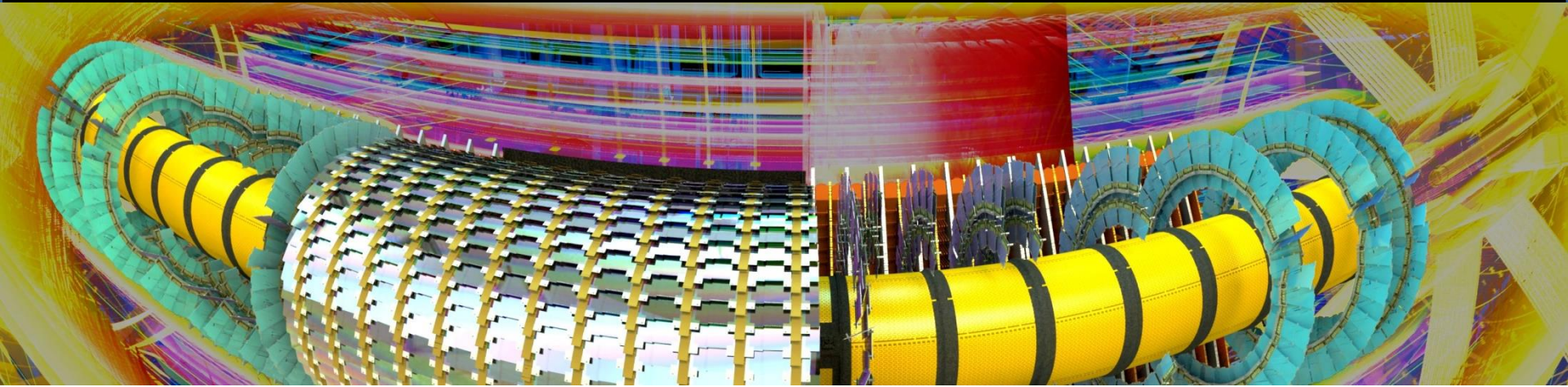


Planetarium Show

Phantom of the Universe

The Hunt for Dark Matter



**Available now for FREE
to planetariums worldwide.**

<http://PhantomOfTheUniverse.org>

Phantom of the Universe

A Planetarium Show

Created by a large international team, led by:

CREATOR & EXECUTIVE PRODUCER **R. Michael Barnett** Lawrence Berkeley National Lab

EXECUTIVE PRODUCERS
Kaushik De University of Texas Arlington
Reinhard Schwienhorst Michigan State University
Markus Nordberg CERN
Carmen Garcia University of Valencia
George F Smoot III Lawrence Berkeley National Lab

DIRECTED BY **Joao Pequeno** CERN

PRODUCED AND WRITTEN BY **Carey Ann Strelecki**



Phantom of the Universe

A Planetarium Show

Why a planetarium show? **Our original ideas**

- **New avenue of LHC public outreach.**
- **More dramatic than IMAX (it surrounds you).**

Great way to show:

- **Galaxies, and a scene with a spiral galaxy blowing apart (without dark matter).**
- **LHC ring.**
- **Collisions (fireworks raining down the walls).**

Phantom of the Universe

A Planetarium Show

Why a planetarium show? What we learned

- Hundreds of planetariums with an interest in a dark matter show (broader than ATLAS or LHC).
- They will present our show for months at a time.
- Planetariums have the perfect science-interested audience for us – general public and K12.

None of this would have been possible with an ordinary film.

☀ 110 million people a year watch planetarium shows. ☀



Phantom of the Universe

A Planetarium Show

Content of the show

Typical planetarium show is 25 minutes.

- **Dark matter created in the Big Bang.**
- **Evidence for dark matter in Galaxies, etc.**
- **Underground search for dark matter.**
- **Search for dark matter at the LHC.**

Phantom of the Universe

A Planetarium Show

Creating the planetarium show involved many international professional teams:

- Academy Award-winning actress as narrator
- Academy award winning sound effects by **Skywalker Sound** – Star Wars, Avatar...
- Hollywood scriptwriter and producer
- Outstanding Director and team of Animators
- Nobel Prize-winning cosmologist
- Experts from seven planetariums
- Sound editors with substantial experience
- And many more...

Phantom of the Universe

A Planetarium Show

- Narrator is **Tilda Swinton**,
Academy Award-winning actress.

Doctor Strange
Hail, Caesar!
A Bigger Splash
Trainwreck
The Grand Budapest Hotel
Snowpiercer
Julia
Moonrise Kingdom
We Need to Talk About Kevin
Chronicles of Narnia: Three films
Curious Case of Benjamin Button
Michael Clayton
Galápagos





Phantom of the Universe

A Planetarium Show

At the 2017 annual International Full Dome Festival in Germany, Phantom of the Universe won:

"Honorable Mention for Outstanding and Innovative Production"



Phantom of the Universe

A Planetarium Show

Vienna Oct. 18, 2016: German-language premiere

The Vienna premiere (with a new exhibit) attended by Peter Higgs, George Smoot, the Austrian minister of culture, and other dignitaries.

“Visually stunning and scientifically fascinating”.

-- Director of Natural History Museum, Vienna

“People love the Show! Everybody who has seen it tells me that it is the best show they have seen in the planetarium yet.”

-- Director of planetarium at Natural History Museum



Phantom of the Universe

A Planetarium Show

Free distributions since Fall 2016:

**Currently or soon to be shown in
almost 400 planetariums in
61 countries on 6 continents.**

In the US in 41 states.



Phantom of the Universe

A Planetarium Show

Foreign language versions of planetarium show

16 languages:

Bulgarian, Chinese, Czech, English, Finnish, French, German, Greek, Italian, Japanese, Polish, Portuguese, Russian, Spanish, Spanish, Swedish, and Turkish... and more in progress.

More languages?

Are you interested to help?

Phantom of the Universe

A Planetarium Show

Mexican version

Versión Mexicana

Narradora

Rebeca MANRIQUEZ

Traducción

Jorge Luis CERVANTES COTA (ININ.IAC)

Isidoro GARCÍA CANO (IFIC)

Carmen GARCÍA GARCÍA (IFIC)

Juan José HERNÁNDEZ REY (IFIC)

Producción

Productora 35

Walter NAVAS

Xanat BRICEÑO

PRODUCTORA 

Banda sonora en español

Al fondo del callejón

Samuel LARSON



Financiado por

Berkeley Center for Cosmological Physics (BCCP)

Instituto Avanzado de Cosmología (IAC)



Phantom of the Universe

A Planetarium Show

Chinese version

Chinese version was produced in 2017 by

Chinese Virtual Observatory (China-VO)

Producer

Chenzhou CUI

(National Astronomical Observatories, Chinese Academy of Sciences)

Narrator

Jake TANG

Audio post processing

Shanshan LI, Tong GUAN

Translation

Yihan TAO, Shanshan LI

Advisors

Xuelei CHEN, Yulong DUAN



Phantom of the Universe

A Planetarium Show

Dark Matter Day

October 31, 2017

Planetariums presented our dark matter show
Phantom of the Universe

Had a local expert to answer questions or give a presentation.

Phantom of the Universe

A Planetarium Show

FUNDING SUPPORT

NSF

DOE

ATLAS

LBNL

Michigan State U.

U of Texas Arlington

CERN

STFC (UK)

IFIC (Valencia)

Institute of High

Energy Physics, Vienna

Natural History

Museum, Vienna

DESY

CEA

IN2P3

And more





Phantom of the Universe

A Planetarium Show

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attention of your local planetarium.**

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The End

Now a clip from the show. **Low-Resolution**

This was made for a planetarium dome.

Converting the dome to a rectangle leads to distortions that are not seen in the planetarium dome.



MUCH more spectacular in dome.

