
SAFIRE
GENESIS

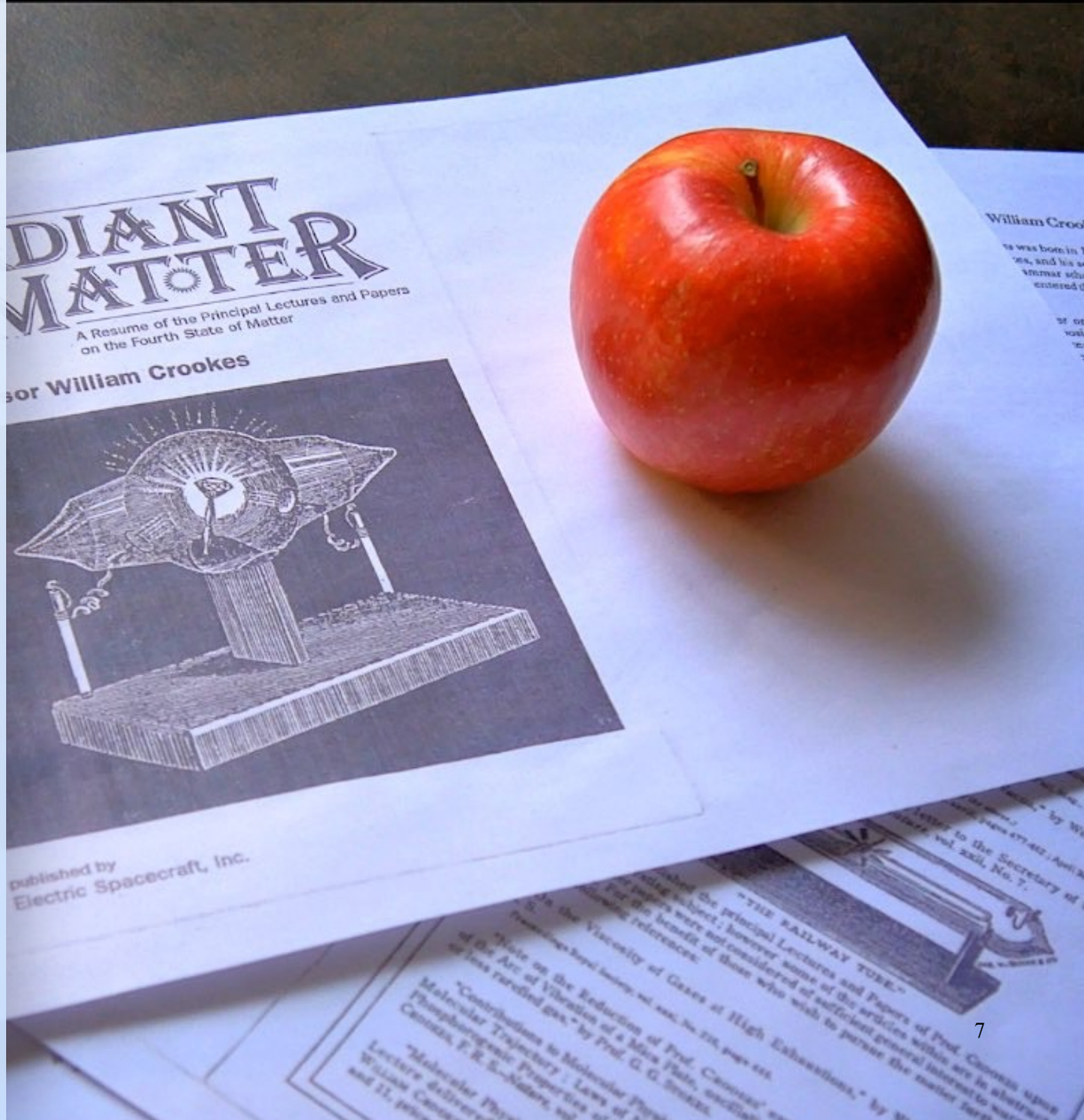
The SAFIRE sun, photographed in the SAFIRE lab, Mississauga, Ontario, Canada, June 15, 2016

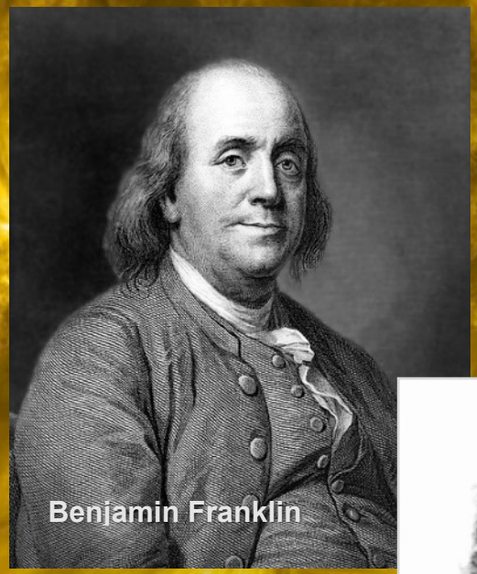
GENESIS

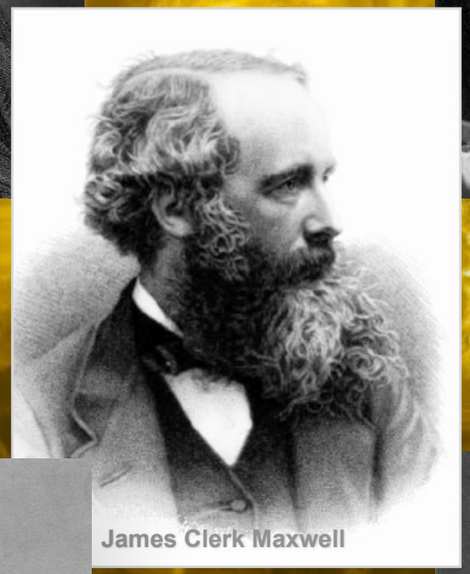
In 2011 engineer Montgomery Childs was researching photovoltaic energy production systems when he noticed that aspects of the Sun's behavior appeared to contradict expected behavior predicted by the standard model of solar physics.

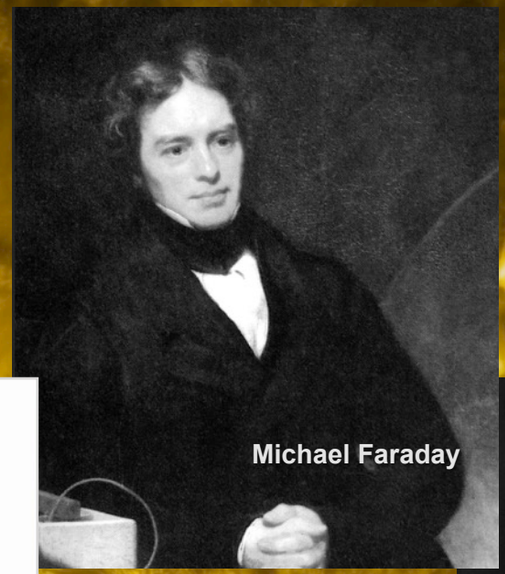
Childs discovered the work of a group of scientists investigating the role of electricity in the functioning of the Sun's atmosphere. The group had been developing a hypothetical model that they called 'The Electric Sun' (ES).

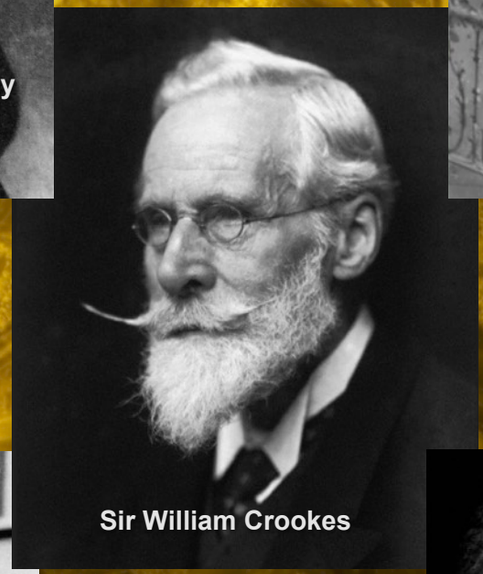
The model is not without precedent. Some of the most illustrious explorers in the history of the sciences have long proposed that electricity plays a much more important role in the heavens than has been acknowledged – Benjamin Franklin, Michael Faraday, James Clerk Maxwell, Sir William Crookes, Kristian Birkeland, Nicola Tesla, Irving Langmuir, Hannes Alfvén, to name only a few.

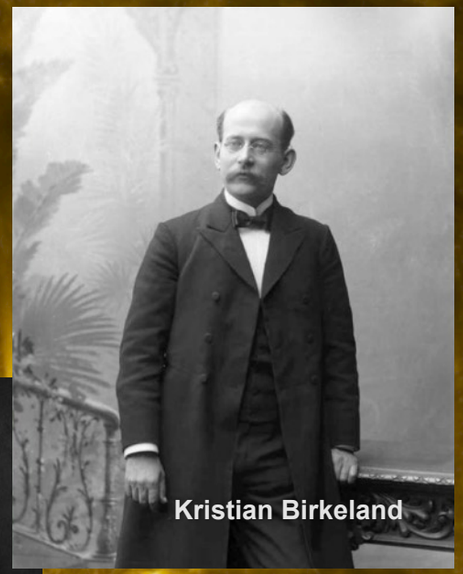


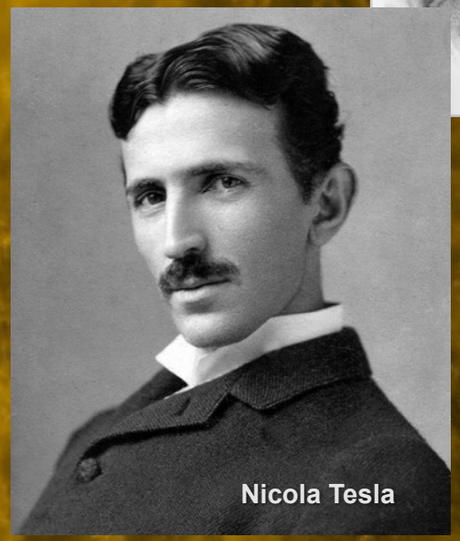

Benjamin Franklin

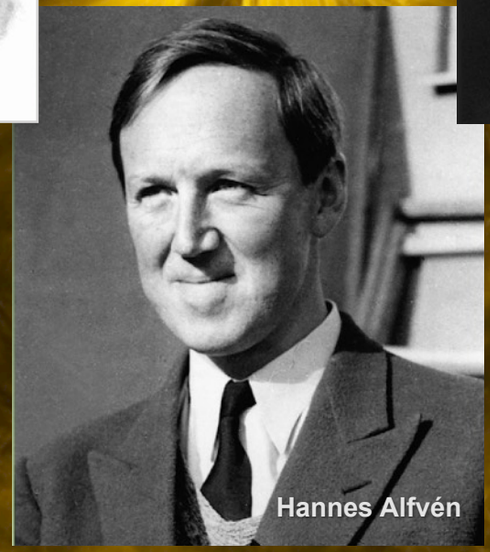

James Clerk Maxwell

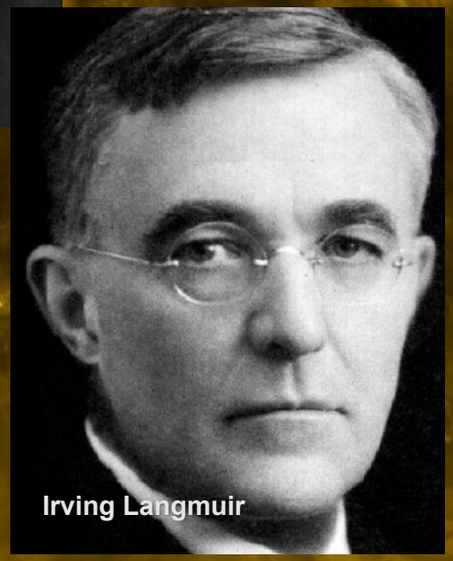

Michael Faraday

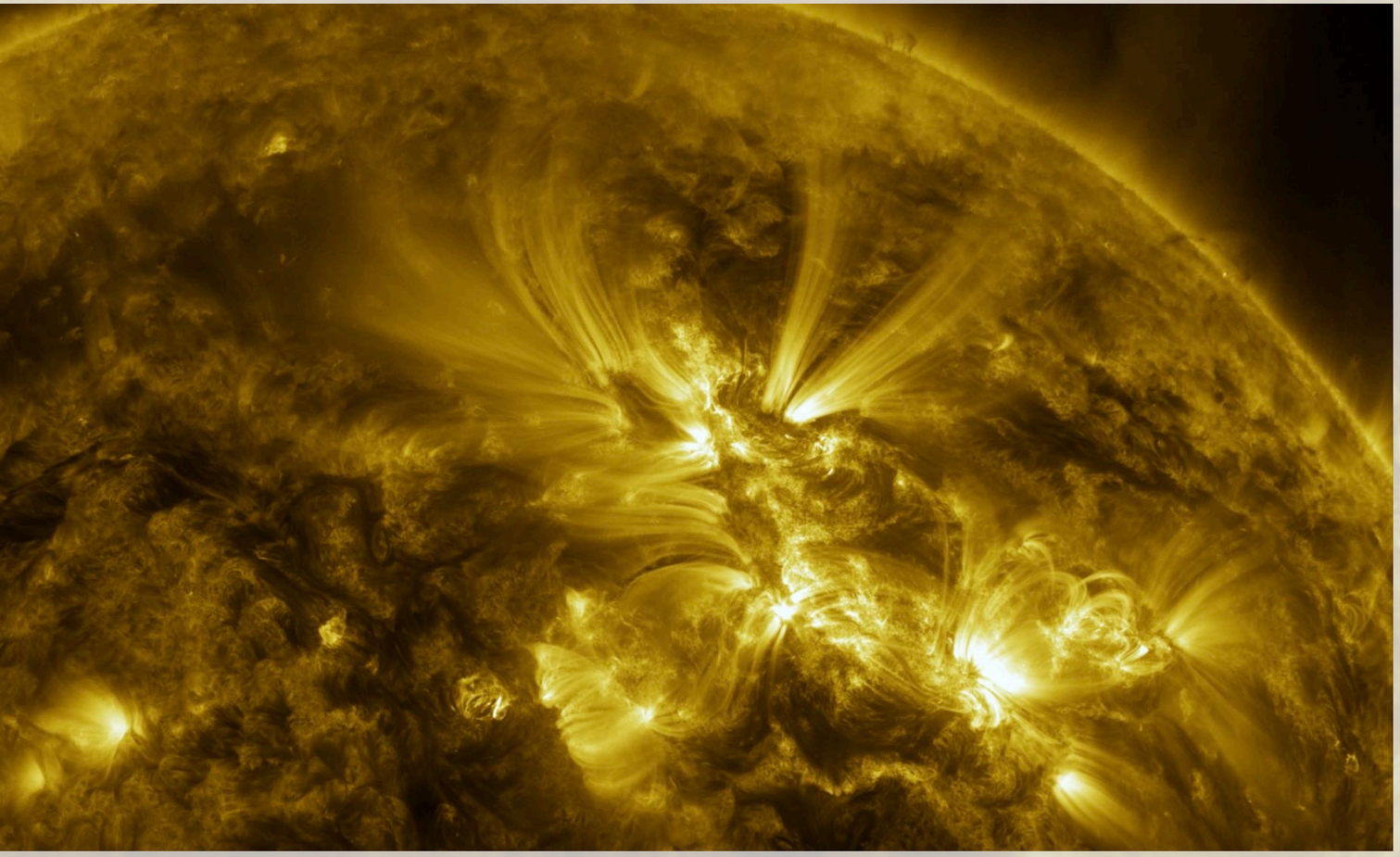

Sir William Crookes


Kristian Birkeland


Nicola Tesla


Hannes Alfvén


Irving Langmuir



Montgomery Childs did not immediately find answers to his questions about photovoltaic energy, but he was so intrigued by the possibilities of the ES model that it started him on a new line of inquiry.

“If you want to test something, you have to know it is testable.”

Childs conducted a preliminary evaluation to determine if the ES model might be testable. He employed the powerful Design of Experiments (DOE) methodology. DOE are used throughout industry to illuminate even the most obscure factors responsible for the outcome of a process. That's how an auto manufacturer can make 120 million brake sets a year without a single failure.

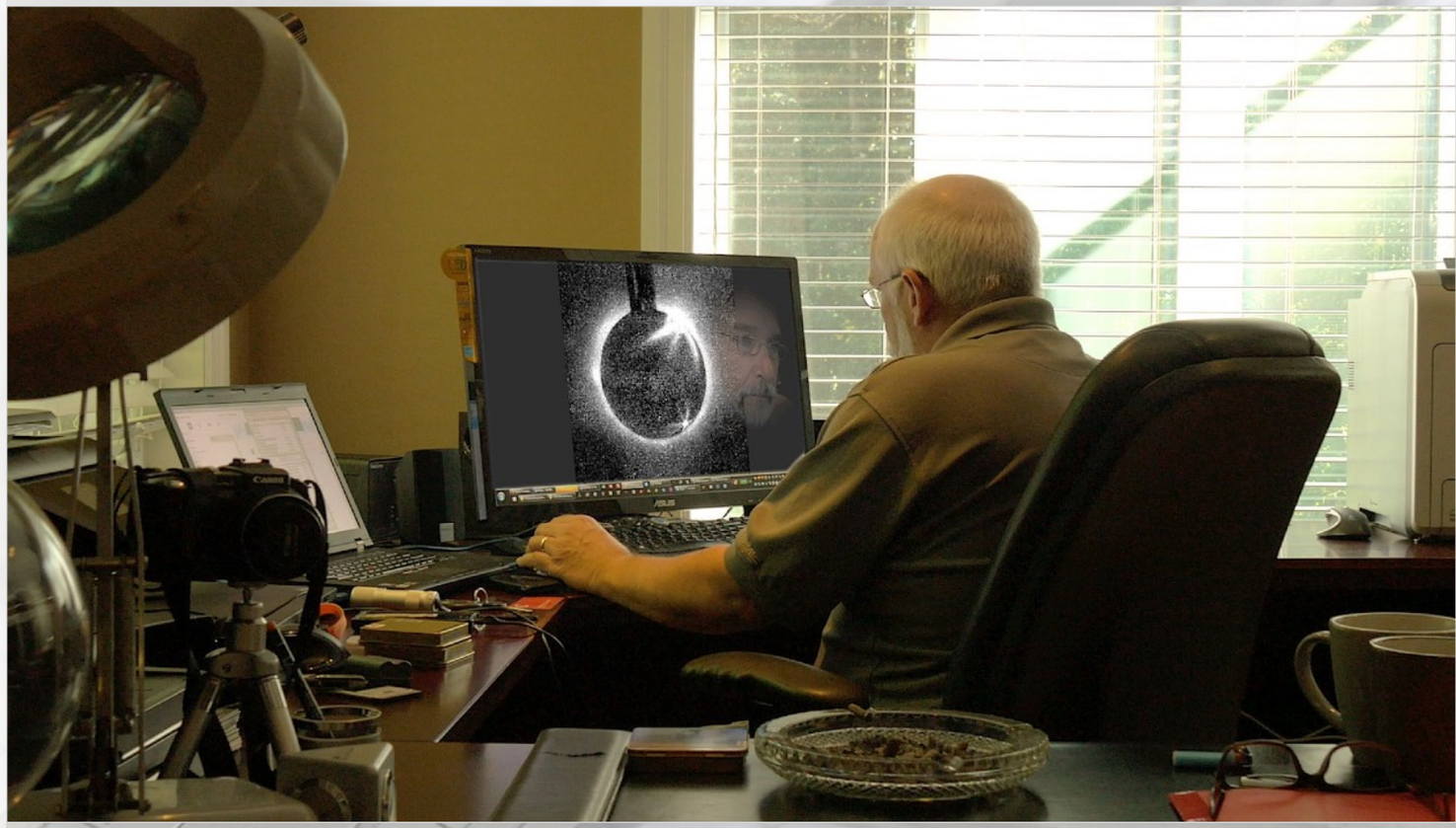
This evaluation led Childs to a particular insight. There are billions of stars in our galaxy. Throughout human history their luminosity, spectral nature, and thermal characteristics have remained relatively constant (a super nova or a pulsar is so rare an event as to be considered an 'outlier', and not that relevant to the overall equation). In industry, something as statistically stable as the stars suggests a relatively simple process. But what would that process be?

Exploring the work of William Crookes, Childs was struck by one of Crooke's famous experiments. Crookes placed rubies in a vacuum tube filled with an electrically charged rarified gas. Although the rubies were not part of the electrical circuit they mysteriously started to glow.

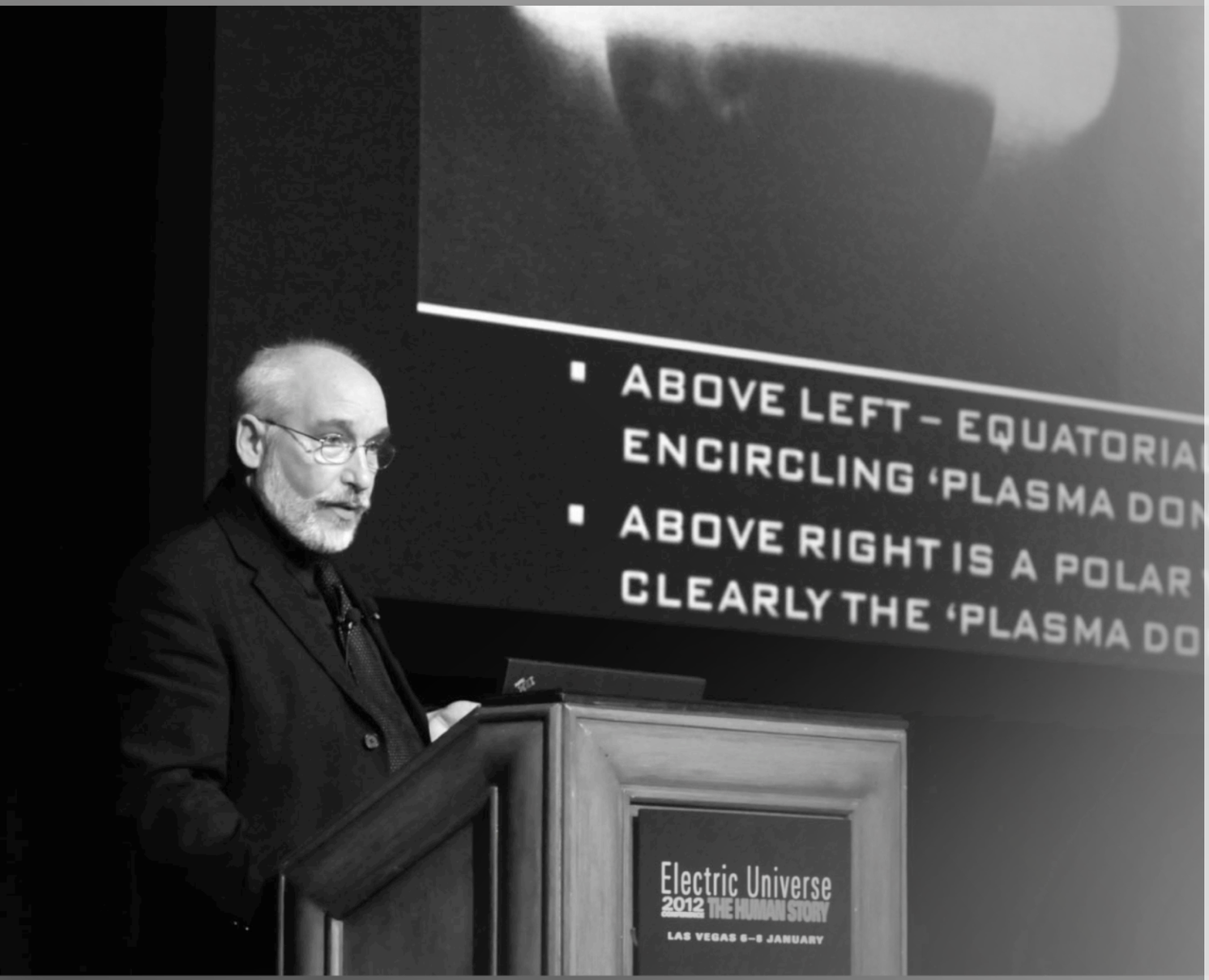
Based on their spectral emissions, it is known that stars differ in their makeup.

The ES model, Crookes work, and Childs' DOE statistical analysis, indicate it is not of primary importance what a star is made of, only that it interacts electrically with its environment. He began to see where the premise of an Electric Sun (ES) model could be boiled down to *a fundamental process of charged plasma affecting matter of a different electrical potential*.

And this is a process that can be created and tested in a lab.



"A fundamental process of charged plasma affecting matter of a different electrical potential."



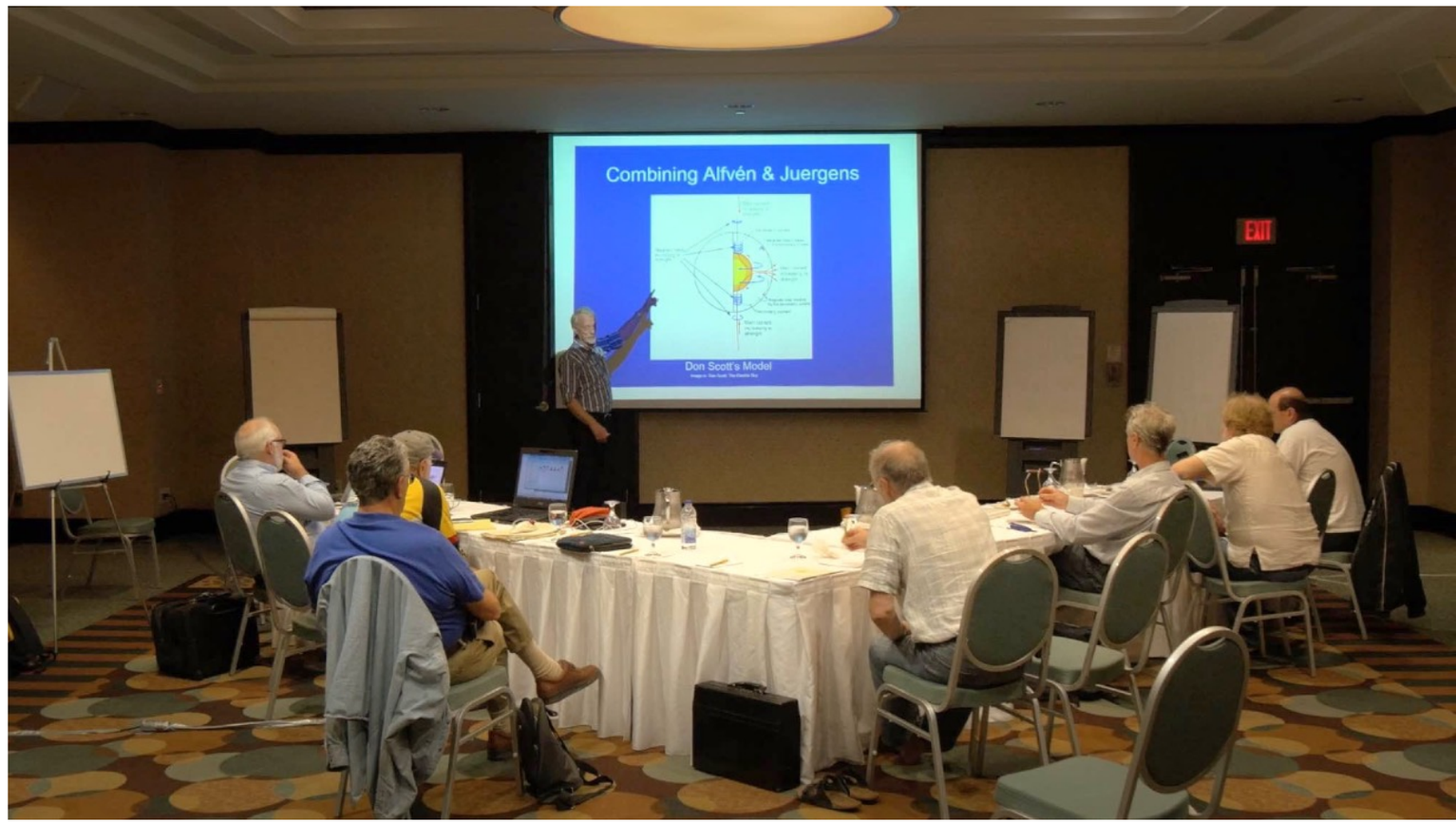
When he proposed the model might be empirically tested in a laboratory, Childs was invited to present his ideas at conferences exploring the role of electricity in nature.

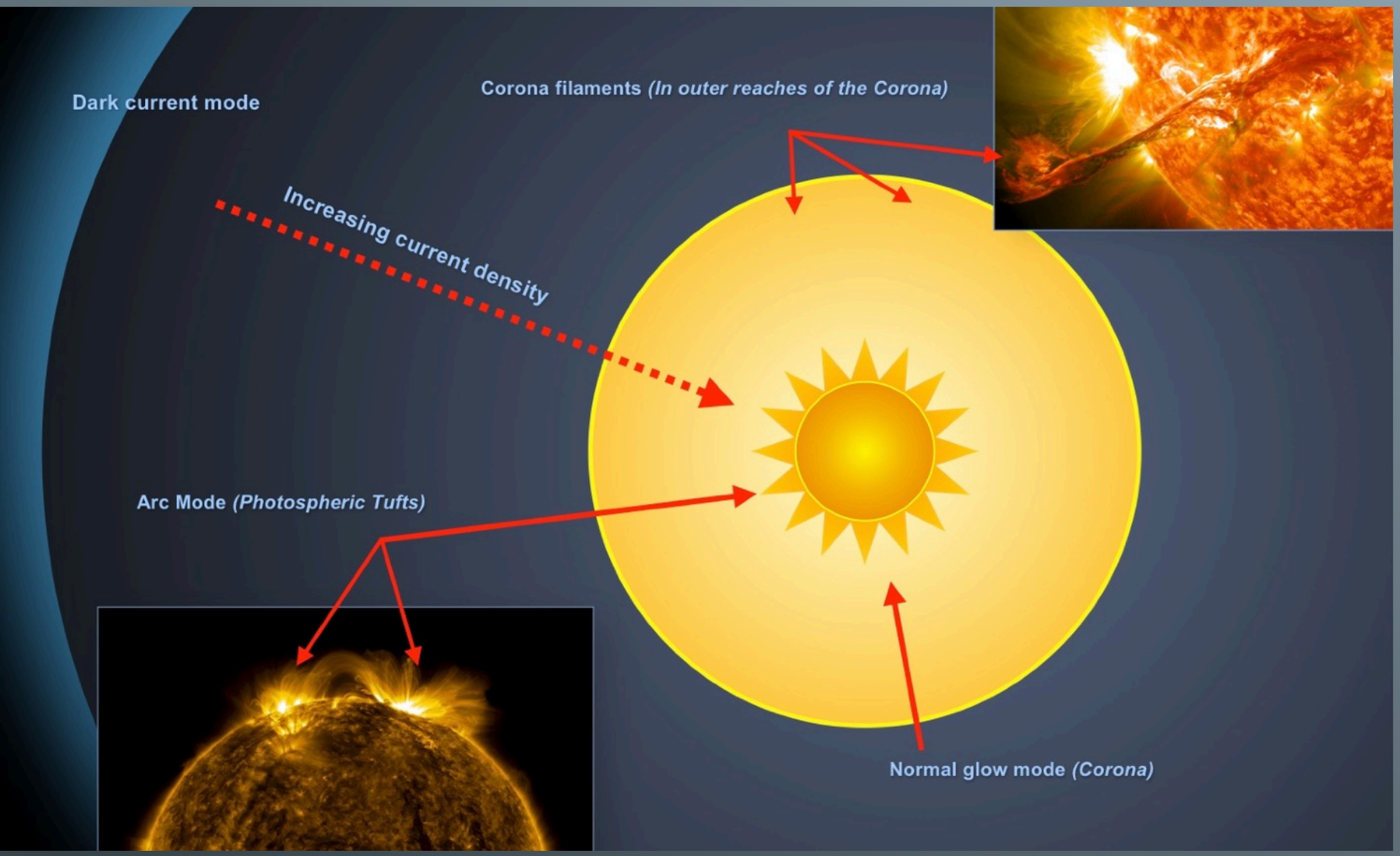
In 2012 he stressed the fact that he had used the (DOE) to evaluate the model and it showed that it was, in fact, testable. He also stated that the robust DOE analysis would be used to direct the design of an experimental apparatus to model solar dynamics.

After his second presentation at a 2013 conference, a small group of interested people convened and discussed in more detail the possibility of building an apparatus to test the hypothesis.

Funding for an initial test was promised by the Mainwaring Archive Foundation, to be administered by the International Science Foundation. Scientists with backgrounds in plasma physics, astrophysics, electrical engineering, and chemistry joined as a core team.

The Stellar Atmospheric Function in Regulation Experiment (SAFIRE) was initiated. Its objective was to test the Electric Sun model.





The standard scientific technique for testing a model is to use the premise of the model to construct an apparatus that can challenge the model's predictions and provide evidence that will disprove or *falsify* the model. Or provide evidence that supports the claims.

There is a great danger in overstating the potential of a scientific experiment in the public forum, so the SAFIRE team agreed that any public discussion of the project would restrict itself to this one pragmatic objective: to test the model.

THE ELEPHANT IN THE ROOM

But right from the start there was *an elephant in the room*.

What if the Electric Sun model could not be falsified? What if the evidence revealed it was actually a viable model?

This was a very large elephant.

Photo: Lara Zanarini

THE SAFIRE PROJECT Team

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Dr. Paul Anderson

Design of Experiments, Chemist

Dr. Lowell Morgan

Applied Physicist

Wallace Thornhill

Cosmologist Electric Universe

Dr. Donald Scott

Plasma Electrodynamics

Jan Onderco

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Jason Lickver

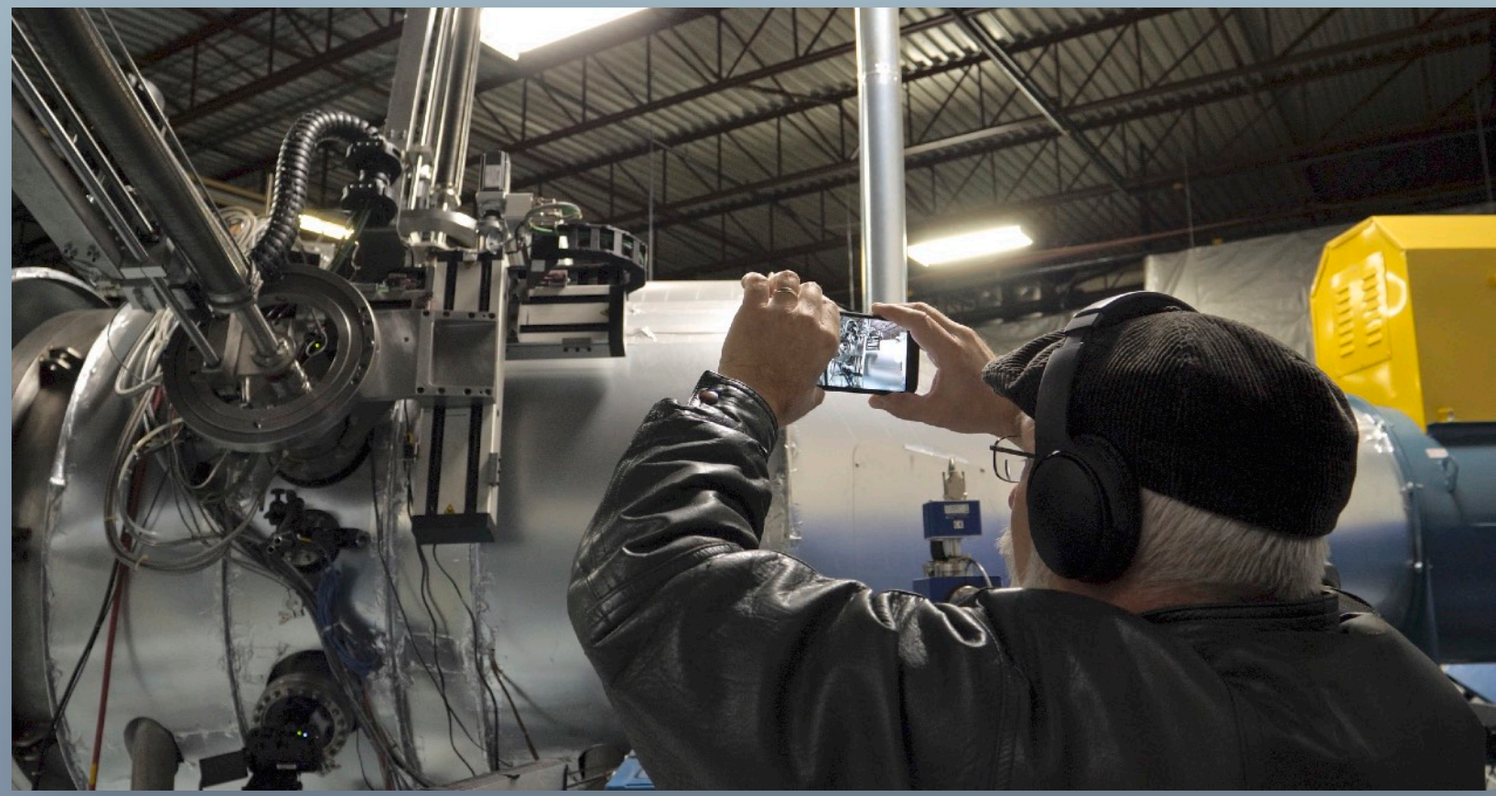
Systems Engineering and Telemetry

Leighton MacMillan

Mechanical and Electrical Technician

Ben Ged Low

Cinematography, Optics, Video Capture



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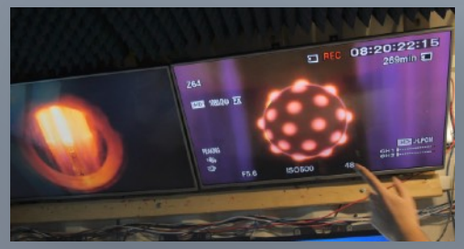

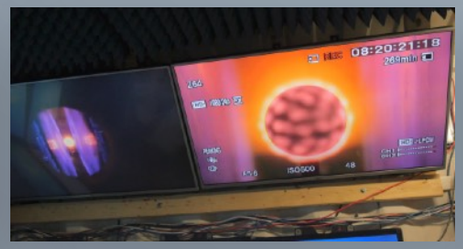

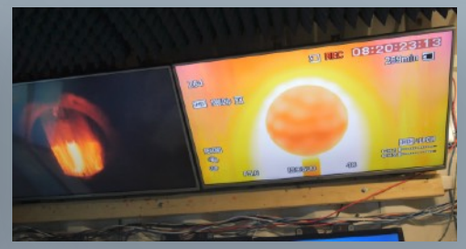

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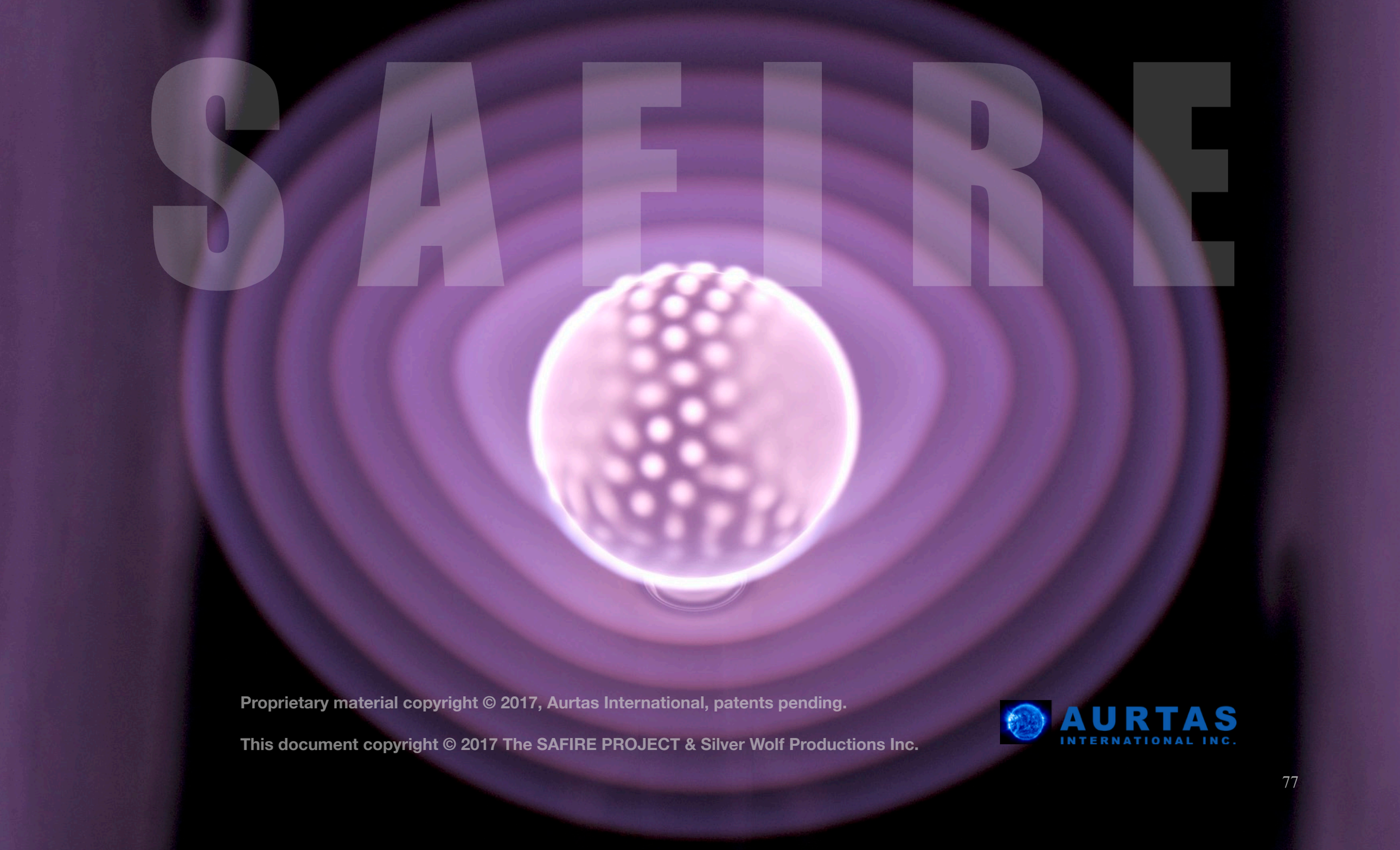

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