



**STScI** | SPACE TELESCOPE  
SCIENCE INSTITUTE



INSTITUTO DE ASTRONOMIA,  
GEOFÍSICA E CIÊNCIAS  
ATMOSFÉRICAS

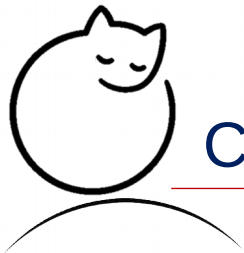
# Estágio no STScI

Divulgação em Astronomia

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Lucas Batista

31.10.2019



## Como foi no começo?

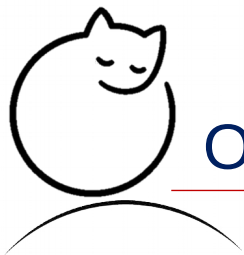
- Aula de “Divulgação em Astronomia” → Professor Jorge Meléndez
- Inscrições entre Dezembro e Janeiro
  - Média ponderada
  - Experiências em coisas específicas
  - Experiências prévias
  - Redação
  - Cartas de referência

		
<b>Profile</b>	<b>Essay</b>	<b>References</b>
Your complete contact information, academic background, and work and research experience.	A creative 500-to-1,000-word statement about yourself, your goals, your interest in science, and why you are interested in an internship.	Provide contact information for two references. These references will be contacted directly by us through <a href="mailto:notifications@slideroom.com">notifications@slideroom.com</a> after we receive your application, to request letters of recommendation.  Please inform your references ahead of time. Emailed reference letters <b>must be received</b> by midnight (EST), Feb. 5, 2019.

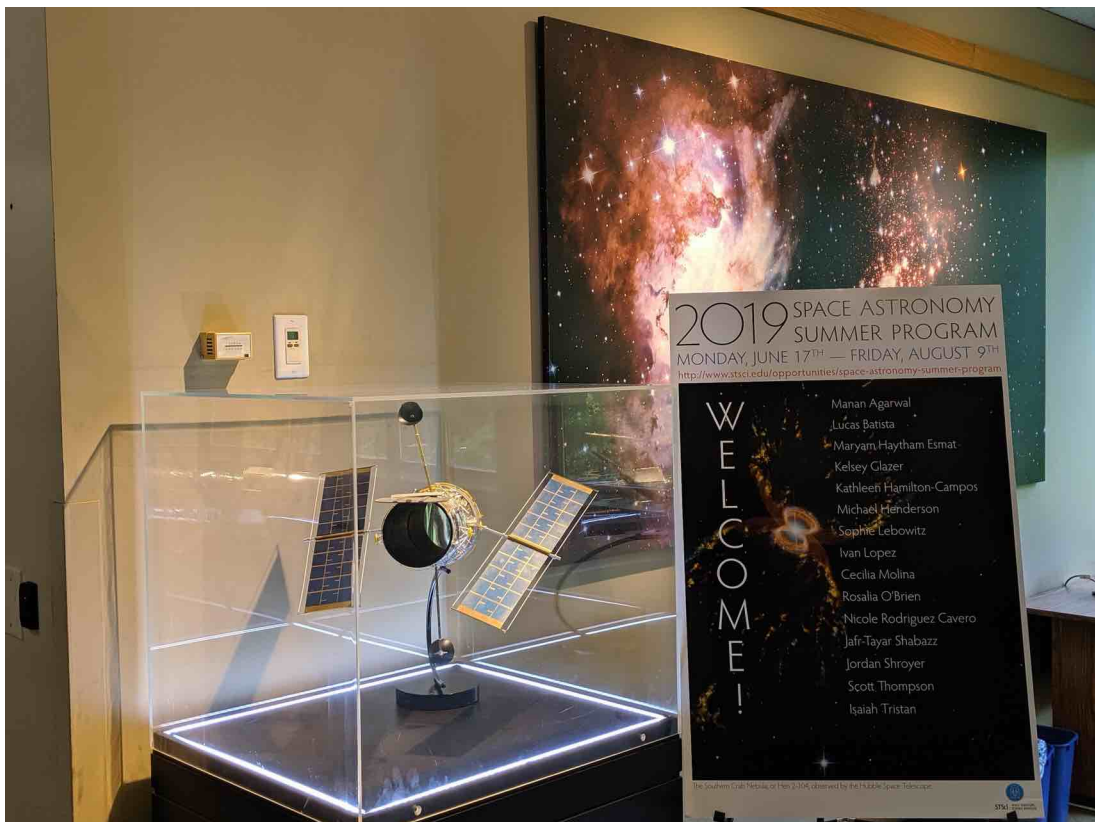


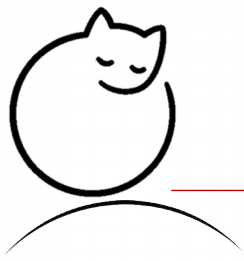
O começo...

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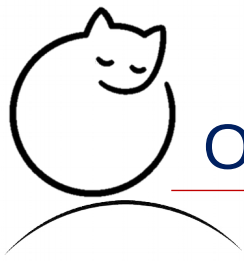
# O grupo





## Meus maravilhosos orientadores



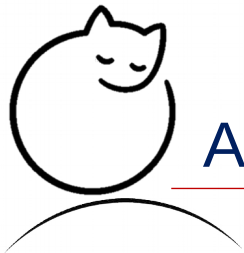


## O projeto

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### **Outreach Opportunities in Optics**

The Space Telescope Science Institute (STScI) performs outreach events to make astronomy exciting, engaging, understandable, and relevant. The intern will create, test, and modify activities to help us meet these objectives. The intern will learn current outreach activities, help deliver them at public events, and document those activities in a consistent format. The intern will adapt and test an activity, originally developed to share optics and coronagraphy with astronomers, for a range of audiences and abilities, and generate a list of potential new outreach activities centered around optics. If progress occurs quickly enough, the intern will be able to create additional new outreach activities in full. To accomplish this work, the intern will work with STScI's Russell B. Makidon Optics Laboratory to learn applicable science, in addition to coordinating with the Office of Public Outreach.

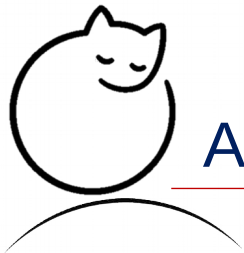


# Aprendendo Ótica

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- Semana #1: Ótica Geométrica
- Semana #2: Difração
- Semana #3: Coronagrafia





# Aprendendo Ótica: adicionando contexto científico

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- Quais resultados queremos com a atividade:
  - Compreender o que é uma situação de alto contraste (exoplanetas)
  - Ter um contexto científico em coronagrafia e como podemos utilizar isso para descobrir objetos astronômicos (Imagem Direta)
  - Entender as partes de um Coronógrafo Clássico de Lyot, como por exemplo a máscara de plano focal e o parador de Lyot

**WEEK #4: SCIENTIFIC  
CONTEXT**

By: This guy

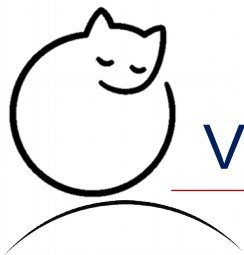






Desenvolvendo a atividade

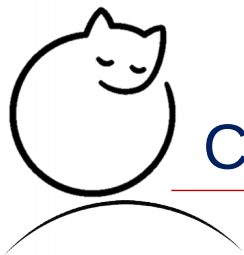
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## Visão geral

- BabyCAT (versão mais simples do HICAT – High contrast Imaging for Complex Aperture Telescopes)
- Era uma experiência não muito didática
  - Não era muito interativa
- Vamos fazer desafios!
- Interação
- Refinar os objetivos e como atingi-los

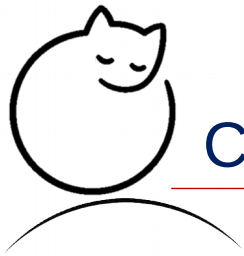




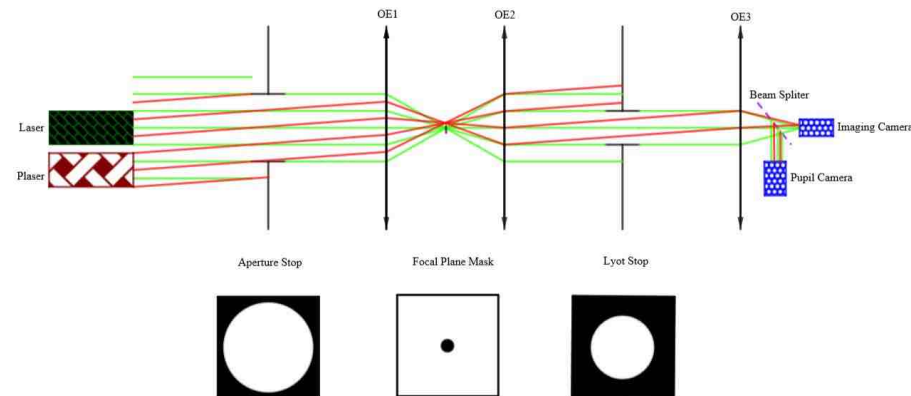
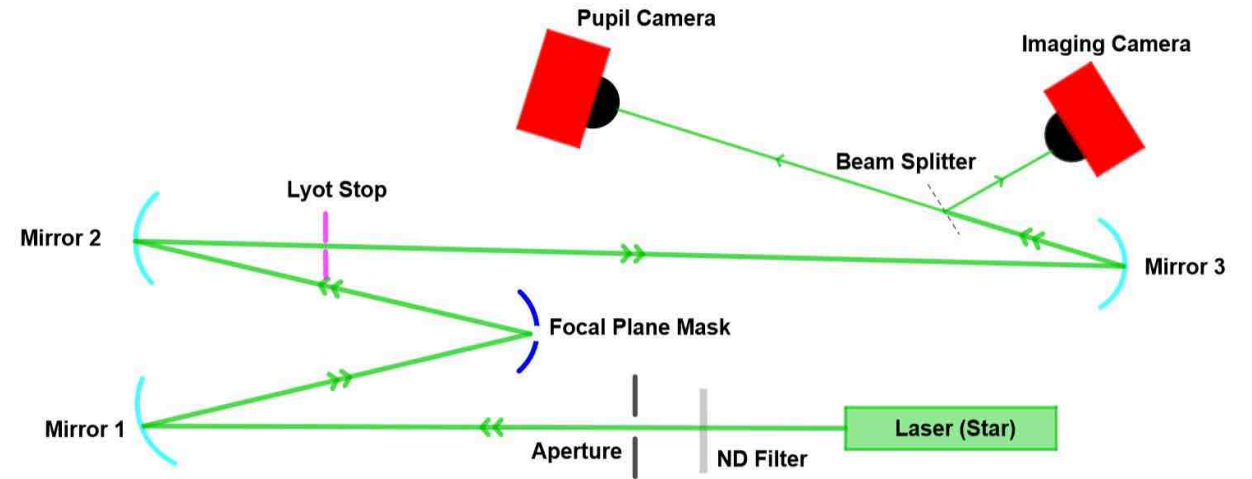
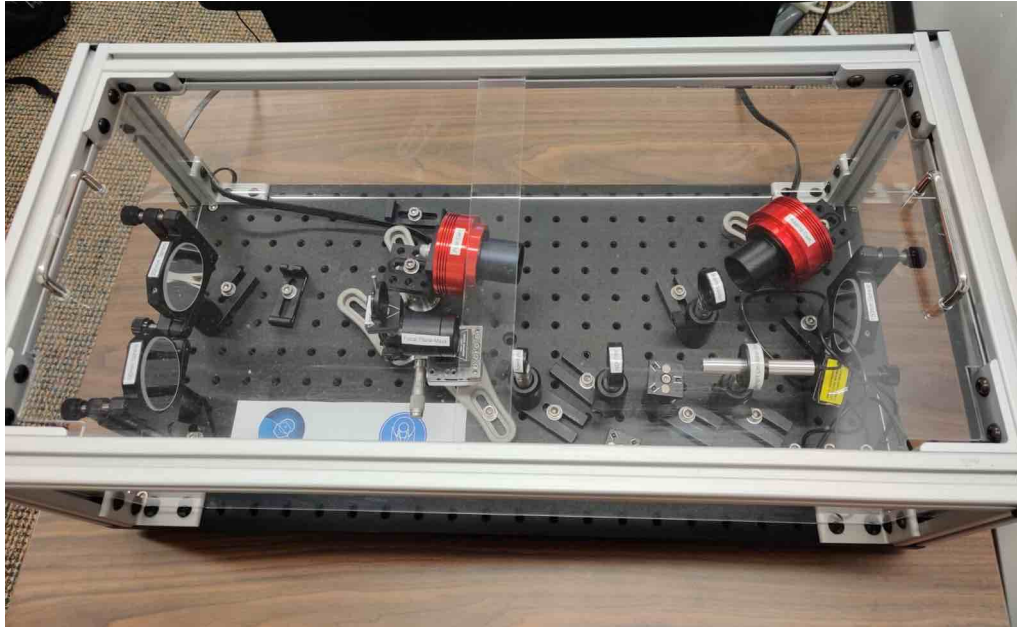
# Como um coronógrafo funciona?

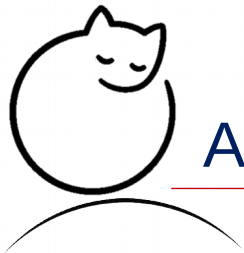
- Fonte de Luz
- Máscara do Plano Focal
- Parador de Lyot
- Detector



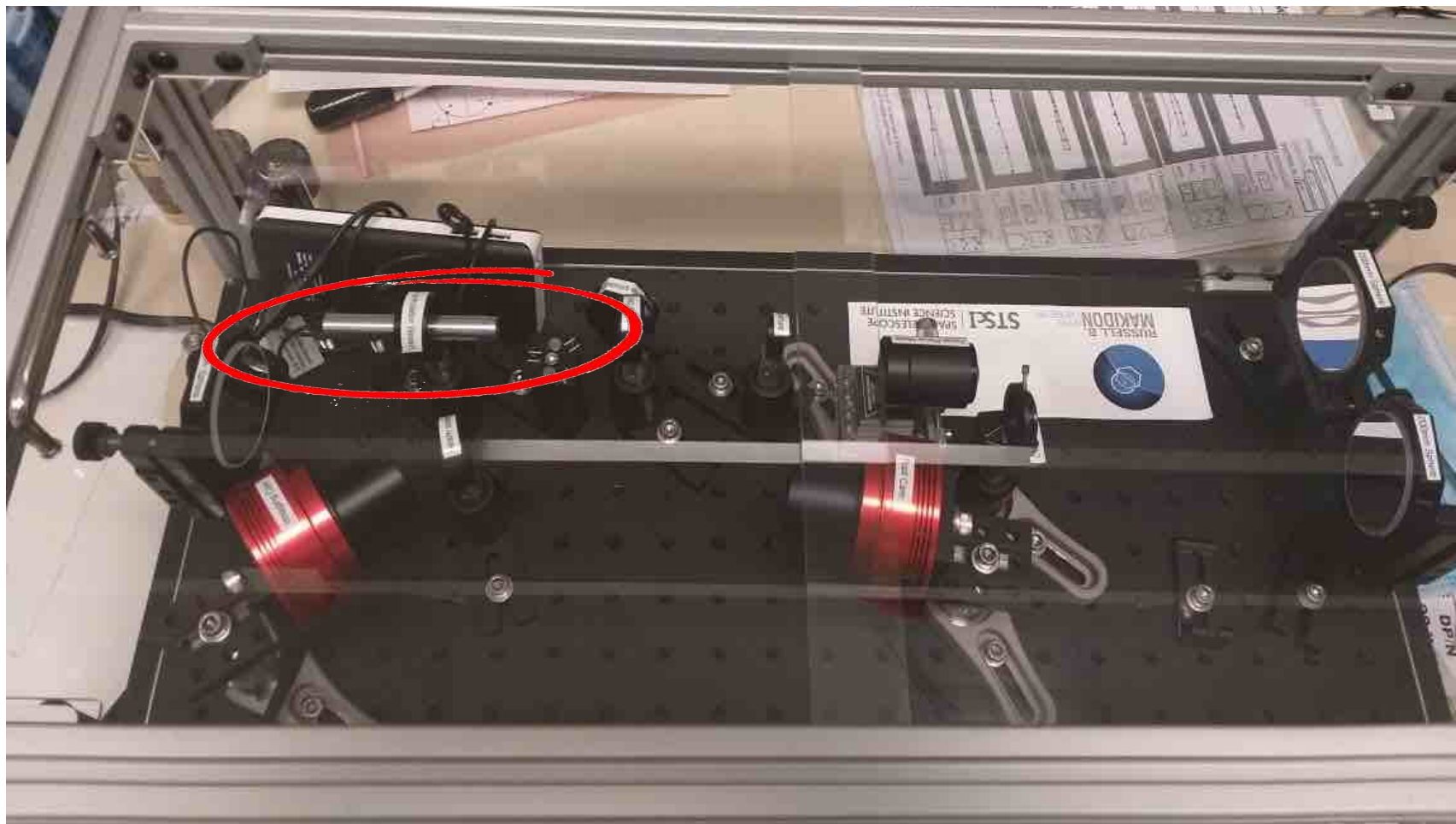


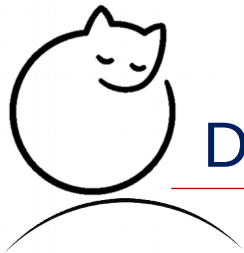
# Como um coronógrafo funciona?



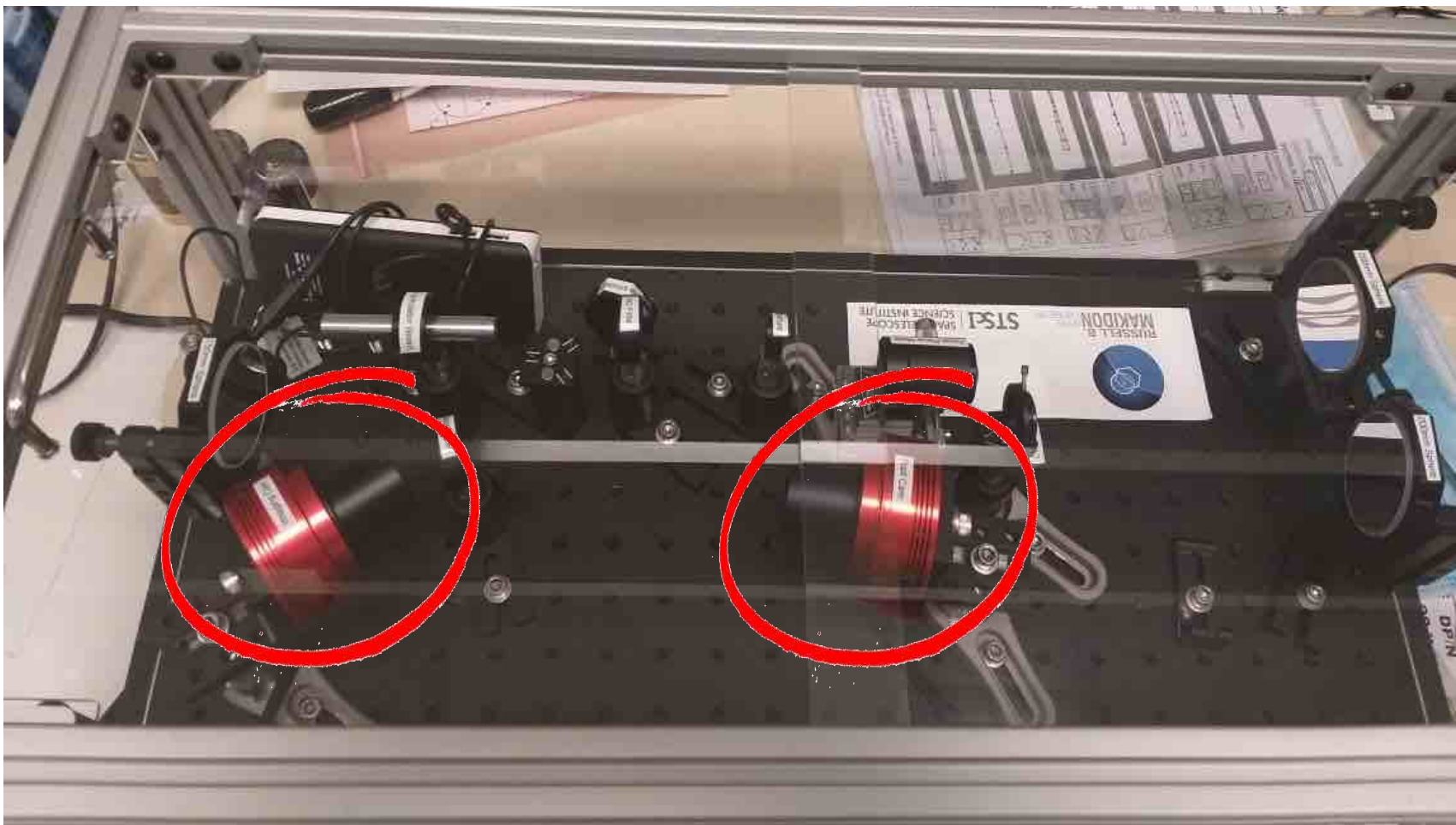


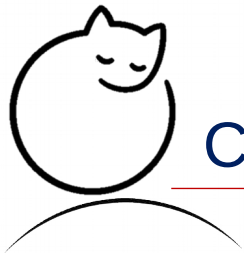
# A fonte de luz: LASER





Diga "x"





# Como as imagens aparecem?

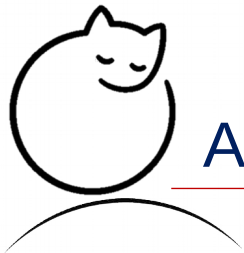
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Camera 1: **sem** a Máscara



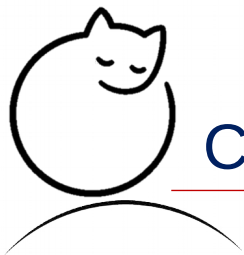
Camera 2: **sem** a Máscara



# A mascara do plano focal





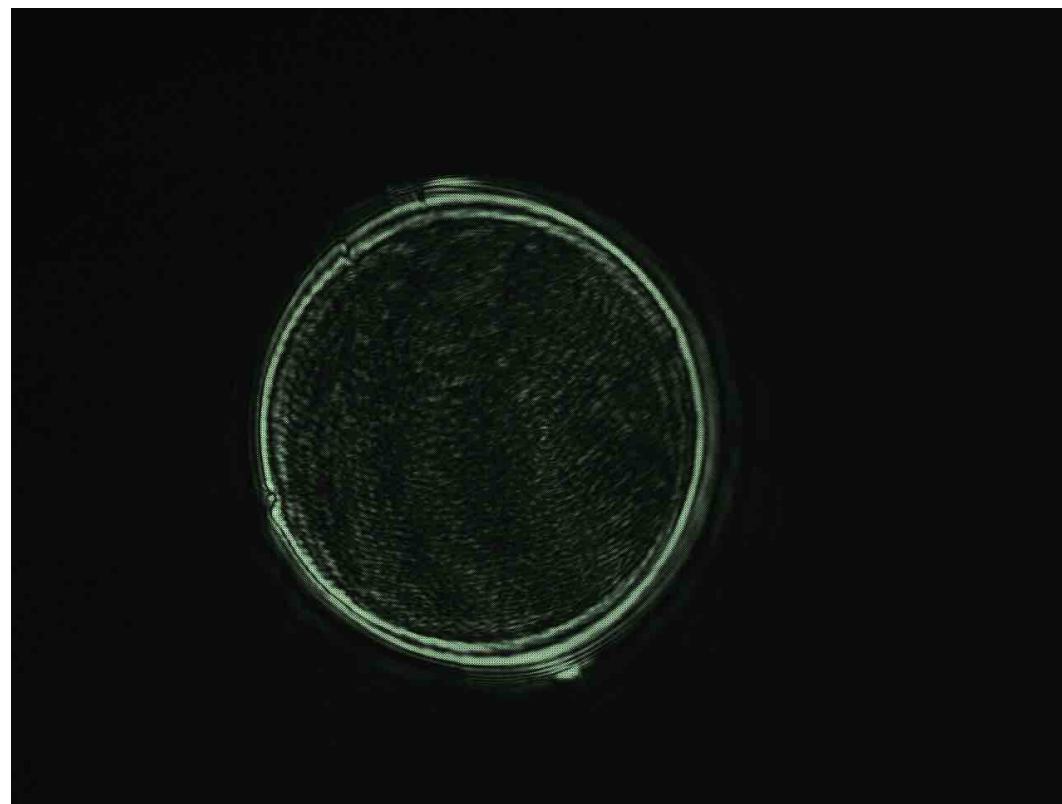


# Como as imagens aparecem?

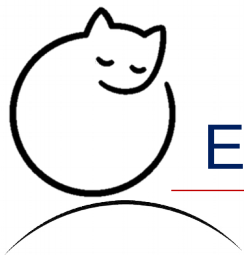
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Camera 1: com a máscara

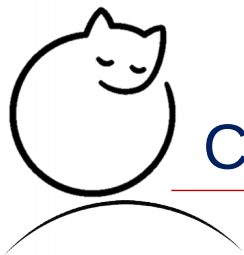


Camera 2: com a máscara



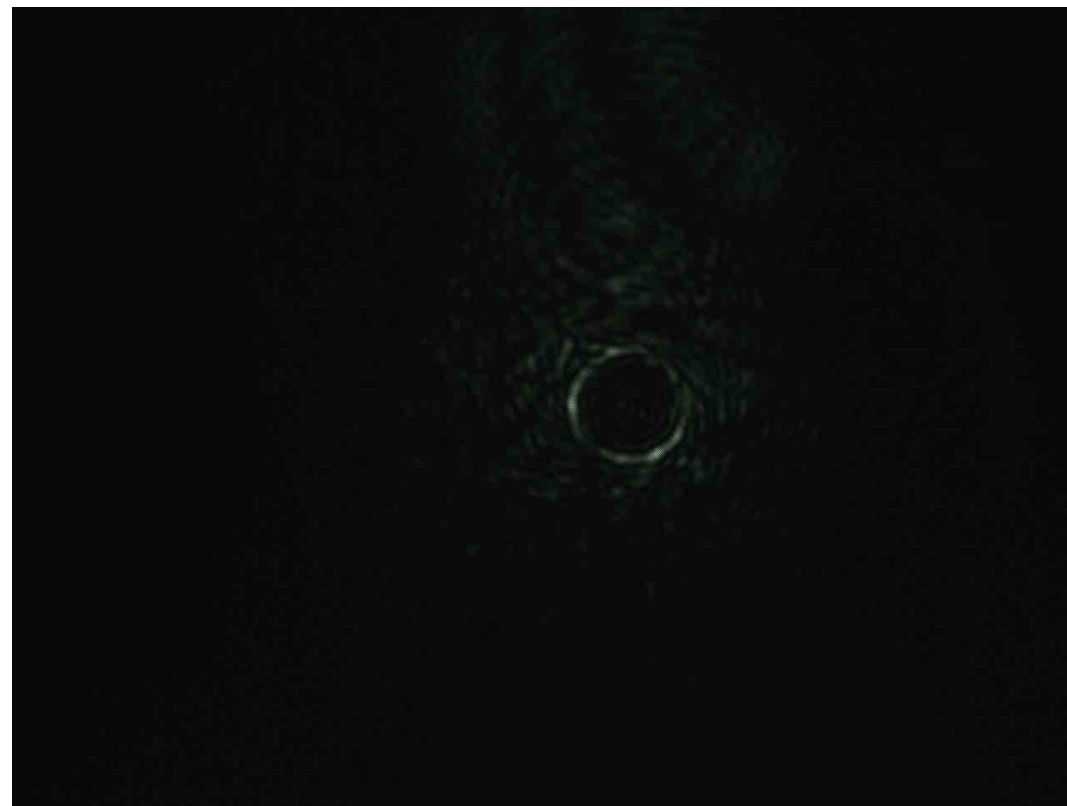
# E finalmente, o Parador de Lyot



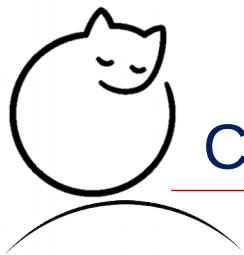


## Como as imagens aparecem?

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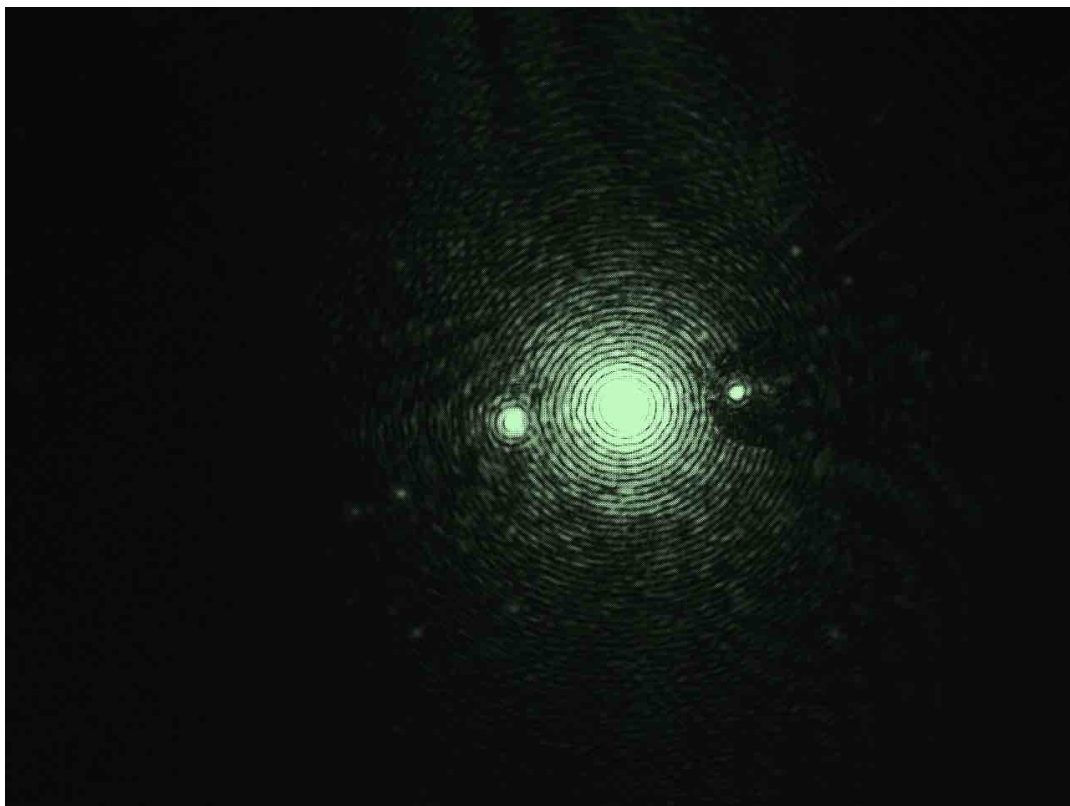


Camera 1: Máscara + Parador de Lyot

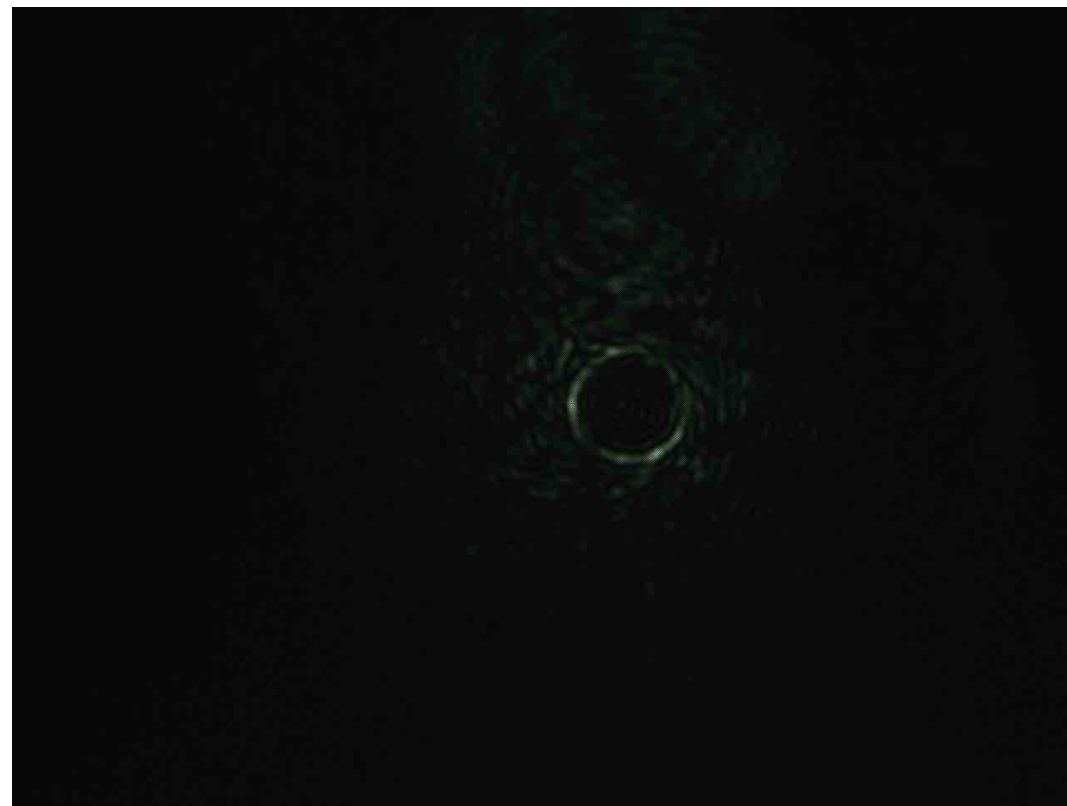


## Como as imagens aparecem?

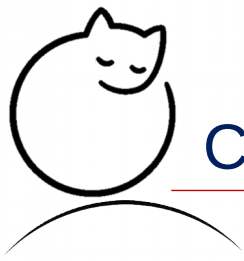
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Camera 1: antes do **BabyCAT**



Camera 1: depois do **BabyCAT**



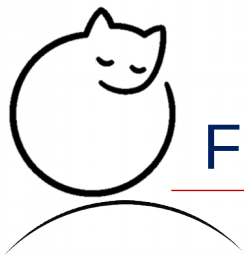
# Coisas para tocar: TUBE (The Unbelievable Blinder Experiment)





Oportunidades para testar e ter ideias

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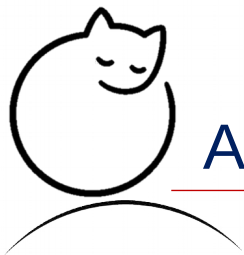


# FRIENDS School Summer Camp

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- Público alvo da atividade
- Contexto e exemplos concretos!





# Aniversário de 50 anos de Apollo 11

- Linguagem
- Várias tendas → mais pessoas para conversar
- Contato com o público → estratégias para divulgar

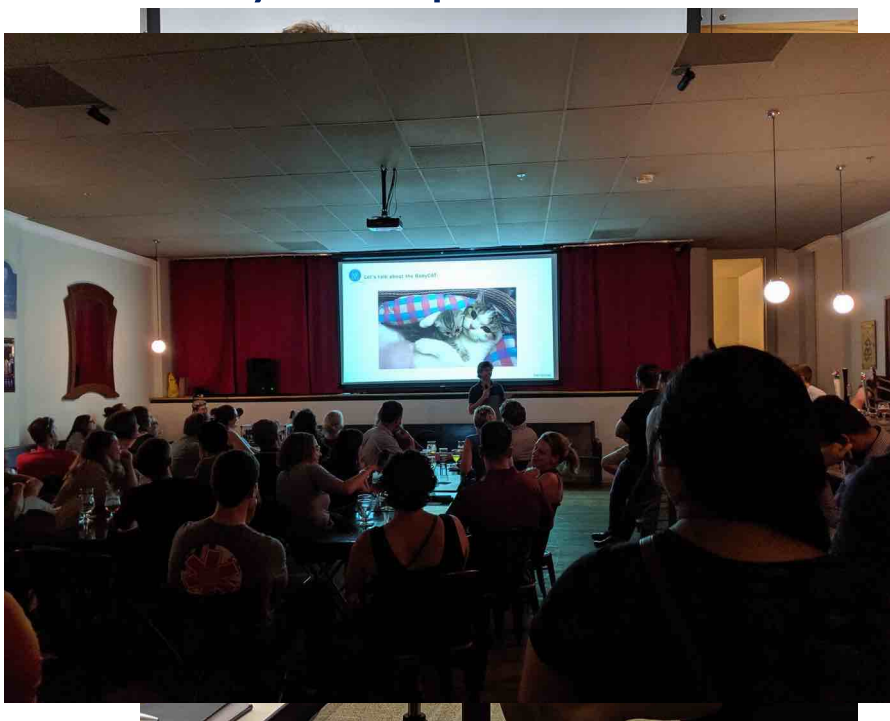






## Outras oportunidades

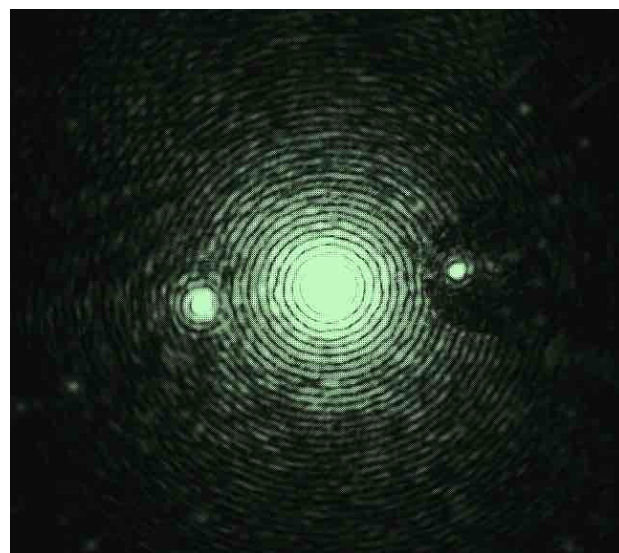
- Tour no laboratório de ótica com os outros estagiários!
- OPO SciCE Meeting
- Astronomy on Tap



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## Perguntas:

- “Por que usar 2 cameras?”
- “Usar a mão para bloquear o sol é coronografia?”
- “Por que a gente bloqueia a luz com um buraco e não um obstaculo?”

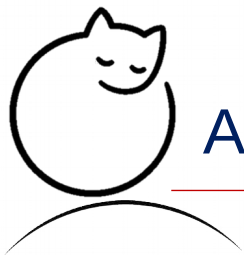




Rosalia Nicole Isaiah Jordan Eu 😊 Sophie Iván Kelsey Mike Cecilia Kathleen Maryam Scott Manan Jafr



OBRIGADO PELA ATENÇÃO



## Apresentação do Lucas no STScI (começa aprox. 31:30)

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<https://cloudproject.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=9bb1e9b5-8229-426e-a6fc-aaa400fe927a>

The image shows a presentation slide from the STScI 2019 Space Astronomy Summer Program Symposium. The slide features a dark blue and purple cosmic background with a glowing nebula. At the top center is the STScI logo, which consists of a blue circle containing a white telescope icon, with the text "STScI | SPACE TELESCOPE SCIENCE INSTITUTE" below it. Underneath the logo is the tagline "EXPANDING THE FRONTIERS OF SPACE ASTRONOMY" in a light blue font. The main title "2019 SPACE ASTRONOMY SUMMER PROGRAM SYMPOSIUM" is displayed in large white letters. Below the title, the text "BabyCAT + T.U.B.E. = My Project 😊" is written in white. At the bottom of the slide, the name "Lucas Batista" is shown in white, with the date "08.09.2019" in orange below it. On the left side of the slide, there is a small inset video frame showing a person in a blue shirt standing at a podium in a conference room.