



# Comunicações da SAB

**05 de novembro de 2021**  
**- Nº 927**

Editado por Maria Jaqueline Vasconcelos

## Informes da Comunidade

O LNA disponibilizou um formulário para as pessoas que desejarem enviar condolências à família de Carlos Alberto Torres. O formulário está disponível em <https://forms.gle/d6Z2AHbotonvgn2m9>).

## Eventos

**Ciclo de Cursos Especiais - II Edição Virtual**

**(Comunicado por Simone Daflon em 04/11/2021)**

This year, the Graduate Program in Astronomy of National Observatory is organizing a compact and virtual format for our traditional advanced school -- Ciclo de Cursos Especiais (CCE) -- for graduate students and young researchers in Astronomy and Astrophysics.

The Virtual-CCE will be held remotely on November 10 - 12, 2021, with the following lecturers:

- Dr Antonella Barucci - Observatory-Meudon (France)
- Dr Alexis Finoguenov - Dept. of Physics, University of Helsinki (Finland)
- Dr Angela Bragaglia - INAF, Osservatorio di Astrofisica e Scienza dello Spazio (Italy)

Registration will be open all the time. Please register using the form available at <https://forms.gle/EHP3PhiksQziHYTw8> to receive the ZOOM link. Participation Certificates will be offered to registered participants. The lectures will be broadcasted on the National Observatory YouTube Channel with free access for all interested parties, who will be able to ask questions through the chat.

\* Program \*

\*November 10th, 10 BRT\*

Dr Antonella Barucci - Observatory-Meudon, Paris (France)  
"The Transneptunian Objects"

\*November 11th, 10 BRT\*

Dr Alexis Finoguenov - Dept. of Physics, University of Helsinki (Finland)  
"High energy astrophysics"

\*November 12th, 10 BRT\*

Dr Angela Bragaglia - INAF-Osservatorio di Astrofisica e Scienza dello Spazio (Italy)  
"The importance of spectroscopy for stellar clusters"

\*Organizing committee\*

Daniela Lazzaro  
Jailson Alcaniz  
Marcelo Borges Fernandes  
Renato Dupke  
Simone Daflon

\*contact\*: [seminarioscoast@on.br](mailto:seminarioscoast@on.br)

## Seminários Virtuais

### 1. SEMINÁRIOS ON-LINE DA DIVISÃO DE ASTROFÍSICA DO INPE - 2021

(Comunicado por Rafael C. Nunes em 03/11/2021)

SEMINÁRIO DE 9 DE NOVEMBRO DE 2021

Terça-feira às 15h (horário de Brasília)

Link da transmissão ao vivo e online pelo Youtube:

<https://www.youtube.com/user/inpemct>

Link de acesso à sala virtual:

<https://inpebr.webex.com/inpebr/j.php?MTID=mec1d23993878f0aac88abb74131c34d>

\*Cosmic Ray Acceleration by Magnetic Reconnection: Probing the Origin of Gamma-Rays and Neutrino Emission from Black Holes and Relativistic Jets of Active Galaxies\*

By Elisabete M. de Gouveia Dal Pino (IAG-USP)

Black Holes (BHs) and Relativistic Jets from active galaxies are among the most extreme particle accelerators and very high energy (VHE) emitters in the universe. Only lately, combining theory, numerical simulations, and observations, we have started to understand the potential physical processes that prevail in the surrounds of these sources in order to explain major puzzles, like the origin of their VHE flares in gamma-rays. In regions of these sources where magnetic fields are dynamically dominating, fast magnetic reconnection is expected and thus particle acceleration driven by this process. In this seminar, I will discuss what is magnetic reconnection and present recent results that combine multidimensional magnetohydrodynamical relativistic simulations with the injection of test particles, which demonstrate how particles can be stochastically accelerated in relativistic jets and accretion flows around BHs by magnetic reconnection. We find that for jets with magnetic fields  $B \sim 10$  G, the particles can be accelerated up to observed ultra-high energies  $\sim 10^{20}$  eV. I will also show that these ultra-high-energy-cosmic-rays (UHECRs) are able to explain the gamma-ray flares and the associated neutrino emission observed in the

relativistic jets from active galaxies. Finally, I will discuss the importances of these results on predictions for forthcoming high energy astrophysical observatories like the Cherenkov Telescope Array (CTA) and the ASTRI Mini-Array Collaborations in which Brazil is involved.

\*Informações: \*Rafael C. Nunes: [rafael.nunes@inpe.br](mailto:rafael.nunes@inpe.br)  
<[https://mail.google.com/mail/u/0/#m\\_-2647193624870894870\\_NOP](https://mail.google.com/mail/u/0/#m_-2647193624870894870_NOP)>

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## **2. Seminários do Departamento de Astronomia da UFRGS**

**(Comunicado por Marina Trevisan em 04/11/2021)**

\* SEMINÁRIO DO DIA 10 DE NOVEMBRO DE 2021 \*

"Probing the Time-Domain Universe for Persistently Variable Stars: New Pulsating and Outbursting White Dwarfs from Gaia, ZTF, and SDSS"

Zach Vanderbosch (Caltech, USA)

Asteroseismology provides the only means to probe the interior compositions and structures of white dwarf stars, placing invaluable constraints on the physical processes involved throughout stellar evolution. In addition, pulsating white dwarfs can be used to place constraints on white dwarf cooling rates, probe the physics of convection, and even search for distant planetary companions. Unfortunately, the full potential of asteroseismology is hard to realize for the majority of pulsating white dwarfs given the often small number of modes observed, the lack of extensive ground or space based observations, and the lack of mode coherence over year or even week-long timescales. These issues are particularly poignant for the less common varieties of pulsating white dwarfs, such as the helium atmosphere DBVs and both the high and extremely low-mass hydrogen atmosphere DAVs, whose stellar evolution pathways also happen to be the most uncertain. Traditional searches for pulsating white dwarfs have involved time-series photometric followup of objects first identified in spectroscopic surveys. In recent years, however, time-domain surveys such as Gaia and ZTF have been increasingly powerful tools for the bulk identification of persistently variable stars, without the need for prior spectroscopic identification. In this talk I will report on recent and ongoing efforts to identify rare types of pulsating white dwarfs using both traditional and newly-developed techniques using both spectroscopic and time domain surveys combined with high speed followup photometry. Many of these objects may become good candidates for detailed asteroseismic analyses with future observations from the TESS spacecraft.

Data: 10 de novembro de 2021 às 13:30

Link da transmissão ao vivo e online pelo Youtube: <https://youtu.be/kkC6sRZUCP4>

Acompanhe a programação dos Seminários do Departamento de Astronomia da UFRGS em: <https://www.ufrgs.br/astronomia/events/>

### **3. Seminários On-line do Departamento de Astronomia do IAG/USP**

**(Comunicado por Maria Victoria del Valle em 04/11/2021)**

SEMINÁRIO DE 10 DE NOVEMBRO DE 2021 AS 14:00 HS:

Our Galaxy in its infancy as traced by Gaia and complementary spectroscopic surveys  
por Paola Di Matteo (Observatoire de Paris)

Reconstructing the past of the Milky Way depends on the study of its metal-poor stars, which either have been formed in the Galaxy itself in the first billion years, or have been accreted through mergers of satellite galaxies over time. These stars are usually found in what is known as the Milky Way halo, a light — in terms of total mass — stellar component which is usually made of stars whose kinematics significantly deviates from that of the Galactic disc. In this talk, I will discuss how it has been possible to use the astrometric and spectroscopic data delivered by Gaia and complementary surveys to shed light on the past of our Galaxy, through the study of its halo. Besides the discovery of the possible last significant merger experienced by the Milky Way, the use of 6D phase space information and chemical abundances allowed to reconstruct the impact this merger had on the early Milky Way disc, and the time it occurred, as well as to discover that some of the most metal-poor stars in the Galaxy possibly formed in a disc. This last finding would imply that the dissipative collapse that led to the formation of the old Galactic disc must have been extremely fast.

Canal do Youtube:

<https://www.youtube.com/c/AstronomiaIAGUSP/live>

A programação pode ser acessada em:

<https://www.iag.usp.br/astronomia/seminarios-do-departamento-de-astronomia>

**Ouvidoria da SAB**

Este é um canal de comunicação entre a Diretoria da Sociedade Astronômica Brasileira e seus associados/a. A finalidade principal desta Ouvidoria é receber manifestações dos associados como sugestões, reclamações e denúncias.

Você pode se manifestar entrando em contato com nossa Ouvidoria através do e-mail:

[ouvidoriasab@sab-astro.org.br](mailto:ouvidoriasab@sab-astro.org.br)

A Ouvidoria é composta por:

1 - Daniela Mourão (UNESP)

2 - Denise Gonçalves (OV/UFRJ)

3 - Fernando Roig (ON)

4 - Walter Maciel (IAG/USP) - Coordenador

### **Pagamento das anuidades da SAB**

A SAB é uma sociedade científica sem fins lucrativos cuja finalidade é congrega os astrônomos do Brasil. Sua única fonte de renda são as anuidades pagas pelos seus sócios. Vimos notando, nos últimos anos, uma diminuição preocupante do número de sócios quites com as anuidades. Solicitamos, por favor, que verifiquem na página da SAB (<http://sab-astro.org.br>) sua situação ou contactem a sra. Rosana, secretária da SAB, por meio do e-mail [secsab@sab-astro.org.br](mailto:secsab@sab-astro.org.br).

### **Formato para publicar no Comunicações da SAB**

As Comunicações da SAB são boletins que são enviados para todos os sócios ativos todas as sextas-feiras às 17:00 h. O formato das notícias a serem publicadas deve ser o que segue. Informamos que não serão editadas ou compostas mensagens com base em links ou textos, não serão editadas tabelas ou imagens. Deve ser informada a sessão de publicação (Informes, Oportunidades, Eventos). Arquivos ou imagens associadas devem ser enviadas preferencialmente como links, ou arquivos anexados em pdf.

Título: XXXXXX

(Comunicado por XXXX em xx/xx/xx)

Texto do que se deseja divulgar: XXXXX

As contribuições devem ser enviadas para o e-mail: [comunicacoessab@sab-astro.org.br](mailto:comunicacoessab@sab-astro.org.br)

## **E-mails de Contato**

Presidência - Helio Jaques Rocha Pinto: [presidenciasab@sab-astro.org.br](mailto:presidenciasab@sab-astro.org.br)

Vice-Presidência - Lucimara Pires Martins: [vicepresidenciasab@sab-astro.org.br](mailto:vicepresidenciasab@sab-astro.org.br)

Secretaria Geral - Daniela Borges Pavani : [secretgersab@sab-astro.org.br](mailto:secretgersab@sab-astro.org.br)

Secretaria da SAB - Maria Jaqueline Vasconcelos: [secretsab@sab-astro.org.br](mailto:secretsab@sab-astro.org.br)

Tesouraria - Alex Cavaliéri Carciofi: [tesourariasab@sab-astro.org.br](mailto:tesourariasab@sab-astro.org.br)

### **Gerais**

Diretoria: [diretoriasab@sab-astro.org.br](mailto:diretoriasab@sab-astro.org.br)

Secretaria da diretoria: [secsab@sab-astro.org.br](mailto:secsab@sab-astro.org.br)

Suporte ao Portal: [suporte@sab-astro.org.br](mailto:suporte@sab-astro.org.br)