

Boston University

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Boston, Massachusetts 02215



AIR MAIL

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Dept. of Physics
Universidade de Sao Paulo
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EIGHTH TEXAS SYMPOSIUM ON RELATIVISTIC ASTROPHYSICS

Boston, Massachusetts, USA

13-17 December 1976

The Eighth Texas Symposium on Relativistic Astrophysics will be held in Boston, Massachusetts, 13-17 December 1976, at the Copley Plaza Hotel. The Symposium will open informally with a cocktail party on Sunday, 12 December, at 8:00 p.m. at the Copley Plaza Hotel.

The Symposium is sponsored by the American Physical Society and the American Astronomical Society.

This meeting, like its predecessors, will be devoted to a discussion of recent developments in high-energy astrophysics, relativity, and cosmology. Topics will include neutron stars, evolution of close binaries, supernovae and stellar collapse, X-ray bursters, quantum mechanics in strong gravitational fields, galaxy formation, black hole physics, and possible anisotropies in Hubble's law. The program will consist of invited review papers and shorter invited talks on recent developments.

The Copley Plaza Hotel offers accommodations to all those attending the Symposium (and their families) at special rates: \$22.00 for a single and \$28.00 for a double or twin room. (A reservation card is enclosed). In view of the closeness of this meeting to Christmas, it seems likely that airplane bookings will be heavy; therefore participants travelling by air are strongly advised to make early reservations.

Return this form to: Eighth Texas Symposium on Relativistic Astrophysics
c/o Department of Physics
Boston University
Boston, Massachusetts 02215
USA

- I would like to be placed on the mailing list for future program announcements of the Symposium
- I would appreciate a personally addressed invitation to the Symposium
- Please send announcements to the following persons, if they are not already on your mailing list (address included):

Return to: EIGHTH TEXAS SYMPOSIUM ON RELATIVISTIC ASTROPHYSICS, c/o DEPT. OF PHYSICS,
BOSTON UNIVERSITY, BOSTON, MA 02215 USA

_____ I plan to attend. Enclosed is my check for the registration fee of \$20.

_____ I plan to attend. I will pay registration fee at the conference.

_____ Please add my name to the list to receive future announcements.

_____ I would appreciate a personally addressed invitation to the Symposium.

NAME (please print) _____

ADDRESS _____

_____ ZIP CODE _____

Program
Eighth Texas Symposium
on
Relativistic Astrophysics

Sponsored by
The American Astronomical Society
The American Physical Society

Supported by
Boston University
Brandeis University
Gravity Research Foundation
Harvard University
International Business Machines Corporation
Massachusetts Institute of Technology
The National Aeronautics and Space Administration
The National Science Foundation
The New York Academy of Sciences
The University of Texas

to be held
December 13 through 17, 1976
at
Copley Plaza Hotel
Copley Square
Boston, Massachusetts

Sunday, December 12

Reception

7 p.m.
State Suite

Monday, December 13

CLOSE BINARIES

9 a.m. – Noon

Low Mass X-Ray Binaries and Their
Relation to Non X-Ray Sources

A. Cowley
University of Michigan

X-Ray Production Mechanisms in
Close Binary Systems

J. Pringle
Cambridge University

Evolutionary History of X-Ray
Binaries

E. van den Heuvel
University of Amsterdam

Mass Transfer Effects in Binary
Evolution

B. Flannery
Center for Astrophysics
Harvard / Smithsonian

Origin and Present Evolution of
Massive X-Ray Binaries

J. Ziolkowski
Polish Academy of Sciences

Lunch

Noon – 2 p.m.

SUPERNOVAE AND STELLAR COLLAPSE

2 p.m. – 5 p.m.

Statistics of Supernovae in
External Galaxies

G. Tamman
Hale Observatories

Observations of Recent Supernovae

R. Kirshner
University of Michigan

Supernovae Explosions

D. Arnett
University of Chicago

Relationship of Pulsars to
Supernovae

J. Taylor
University of Massachusetts

Supernovae Remnants

E. Salpeter
Cornell University

Tuesday, December 14

**QUANTUM THEORY IN STRONG
GRAVITATIONAL FIELDS**

9 a.m. – Noon

Chairman: B. DeWitt

University of Texas – Austin

Quantum Field Theory in Curved Space –
Time: an Overview

C. Isham
Imperial College

Fundamental Breakdown of Physics in
Gravitational Collapse

S.W. Hawking
Cambridge University

Thermodynamics of Black Holes

D. Sciama
University of Oxford

Stress Tensor Calculations

P. C. W. Davies
Kings College, London

Particle Detectors and Black Holes

W. Unruh
University of British Columbia

Lunch

Noon – 2 p.m.

COSMOLOGY

2 p.m. – 5 p.m.

Chairman: P. J. Peebles

Princeton University

Is There Evidence for Anisotropy in
the Expansion of the Universe?

V. Rubin
Carnegie Institution

Cosmological Constant, Models and
Distant Galaxies

B. Tinsley
Yale University

Three-Degree Black-Body Radiation
Spectrum

R. Weiss
M. I. T.

Wednesday, December 15

X-RAY ASTRONOMY	9 a.m. – Noon
Observations of Extragalactic X-Ray Sources	H. Schnopper Center for Astrophysics Harvard / Smithsonian
Polarization of Cosmic X-Ray Sources	R. Novick Columbia University
To be Announced	E. Boldt Goddard Space Flight Center
Results From Ariel 5	K. A. Pounds University of Leicester
Extragalactic X-Ray Results from the Ariel 5 Proportional Spectrometer	J. L. Culhane University College, London
Lunch	Noon – 2 p.m.
X-RAY BURSTERS AND GLOBULAR CLUSTERS	2 p.m. – 5 p.m.
Observations of X-Ray Bursters	H. Gursky Center for Astrophysics Harvard / Smithsonian
Observations of X-Ray Bursters	W. Lewin M. I. T.
To be Announced	J. Ostriker Princeton University
Optical Observations of Globular Clusters	W. Liller Center for Astrophysics Harvard / Smithsonian
Reception and Dinner	6:30 p.m. Foyer 7:30 p.m. Grand Ballroom

Speaker:

Dr. S. Jocelyn Bell Burnell,
University College, London

Thursday, December 16

NEUTRON STARS	9 a.m. – Noon
Neutron Stars Within the Laws of Physics	K. Brecher M. I. T.
Neutron Star Structure: General Review	V. Canuto NASA
Knowledge of Neutron Stars Derived from X-Ray Observations	F. Lamb University of Illinois
Neutron Star Masses: Observational Constraints	S. Rappaport M. I. T.
Timing Effects in Rotating Neutron Stars	E. Schreier Center for Astrophysics Harvard / Smithsonian
Lunch	Noon – 2 p.m.
GRAVITATIONAL THEORIES	2 p.m. – 5 p.m.
Chairman: A. Trautman University of Warsaw	
Supergravity	B. Zumino CERN
Gravitational Radiation Damping and Energy Loss in Binary Systems – a Discussion	J. Ehlers Max Planck Institute and W. Burke Santa Cruz
Computer Generated Space – Times: Black Holes and Gravitational Radiation (with film)	L. Smarr Harvard University
A New Approach To Einstein's Equations	I. Robinson University of Texas – Dallas

Friday, December 17

QUASARS

- | | |
|---|--|
| Apparent "Superrelativistic" Expansion of Quasars: Evolution or Revolution? | I. Shapiro
M. I. T. |
| Angular Sizes of Quasars | J. Wardle
Brandeis University |
| Special Properties of Quasars | D. Richstone
Hale Observatories |
| The Relationship Between Quasars and Galaxies | P. Strittmatter
University of Arizona |
| Theories of Quasars | M. Rees
Cambridge University |
| Lunch | Noon - 2 p.m. |

GALAXIES

- | | |
|--|---------------------------------------|
| Physical Parameters of Radio Galaxies | H. van der Lann
Leiden Observatory |
| Statistics of Radio Sources | J. Wall
CSIRO
Sydney University |
| Interactions of Radio Galaxies with the Intergalactic Medium | D. De Young
N.R.A.O. |
| Rotation Curves of Spiral Galaxies | E. Salpeter
Cornell University |
| Interactions Between Galaxies | A. Toomre
M. I. T. |

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All sessions will take place in the Grand Ballroom. Admission is by registration: Fee - \$20 (students \$5). Registration desk open Sunday evening and 9 a.m. daily.

**LOCAL ORGANIZING COMMITTEE**

- |             |                |            |
|-------------|----------------|------------|
| B. Burke    | R. Giacconi    | I. Shapiro |
| S. Deser    | H. Gursky      | J. Stachel |
| R. Gajewski | M. Papagiannis |            |

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Please direct all inquires and correspondence to J. Stachel (617-353-2618) or D. Onash (617-353-2660) at:
Dept. of Physics, Boston University,
111 Cummington St., Boston, MA 02215

VIAGEM AO EXTERIOR – Comunicado de Isenção (CI)

Requerimento de dispensa da obrigação
contida no art. 1º do Decreto-Lei nº 1.470/76

I – DADOS RELATIVOS AO VIAJANTE

① Nome: MARIO SCHENBERG			
② Residência: Rua Avenida Dr Arnaldo 2050			
Cidade: São Paulo	Estado: São Paulo	Telefone: 262 4045	
③ Profissão: Professor universitario de Fisica		④ CPF: 007006498	
⑤ Duração da viagem: Partida: 1 12 1976 Retorno: 1/1 / 1977		⑨ País(es) de destino: Estados Unidos	
⑥ Entidade interessada: Academia de Ciencias do Estado de S. Paulo			
⑦ Dependentes:	Nome	Idade	Parentesco
⑧ Motivo da dispensa: Participar do Eighth Texas Symposium on Relativistic Astrophysics e apresentar pesq.			⑩ Documentos anexados: Imposto Renda 1976 Convite Recomendação da Ac. Cienc. S. Paulo
			⑪ Local para onde deve ser enviado o CERTIFICADO do Banco Central: São Paulo S.P.
⑫ Local: São Paulo Data: 3 19 / 1976 Assinatura: <i>Mario Schenberg</i>			

II – INFORMAÇÃO DO GABINETE DO MINISTRO

Dispositivo legal que fundamenta a dispensa da obrigação contida no art. 1º do Decreto-Lei nº 1.470/76	Observações:
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III – DESPACHO DO CHEFE DO GABINETE

De acordo. Encaminhe-se ao Banco Central do Brasil para fins de expedição do CERTIFICADO.

Brasília, de de 197

Chefe do Gabinete do Ministro

OBSERVAÇÕES GERAIS

- A — Deve ser utilizado um formulário distinto para cada pessoa que deseje beneficiar-se da dispensa do depósito estabelecido pelo Decreto-Lei n.º 1.470/76, exceto os dependentes.
- B — Os formulários deverão ser preenchidos a máquina, ou em letra de forma.
- C — Os requerimentos deverão ser encaminhados com a antecedência mínima de 30 dias para permitir sua apreciação em tempo hábil.
- D — Deve ser apresentada documentação comprobatória do motivo da isenção.
- E — Os servidores públicos deverão comprovar, ainda, a autorização para afastamento do País da autoridade competente, ou apresentar declaração de suas repartições de que se encontram em gozo de férias ou licença.

INSTRUÇÕES PARA PREENCHIMENTO DO FORMULÁRIO

- Item 1 — Nome completo.
- Item 2 — Endereço residencial completo.
- Item 3 — Profissão do viajante.
- Item 4 — Número do C.P.F.
- Item 5 — Duração da viagem, especificando, se possível, as datas de partida e retorno.
- Item 6 — Entidade ou organização educacional, desportiva ou artística interessada na viagem (quando houver).
- Item 7 — Relação dos dependentes que acompanharão o viajante, somente quando o afastamento for superior a seis meses.
- Item 8 — Justificativa para a viagem, dentro das isenções previstas no Decreto n.º 77.745/76.
- Item 9 — Relação do(s) país(es) a ser(em) visitado(s).
- Item 10 — Relação dos documentos que acompanharem o requerimento.
- Item 11 — O Certificado de Dispensa poderá ser enviado pelo Banco Central do Brasil às seguintes localidades, de livre escolha do viajante, que deverá indicar tal circunstância neste item:

Aracaju (SE)	Itabuna (BA)	Porto Alegre (RS)
Bagé (RS)	Itajaí (SC)	Recife (PE)
Belém (PA)	João Pessoa (PB)	Rio Grande (RS)
Belo Horizonte (MG)	Joinville (SC)	Rio de Janeiro (RJ)
Blumenau (SC)	Maceió (AL)	Salvador (BA)
Brasília (DF)	Manaus (AM)	Santana do Livramento (RS)
Campina Grande (PB)	Natal (RN)	Santos (SP)
Campinas (SP)	Niterói (RJ)	São Francisco do Sul (SC)
Corumbá (MT)	Paranaguá (PR)	São Luís (MA)
Curitiba (PR)	Parnaíba (PI)	São Paulo (SP)
Florianópolis (SC)	Passo Fundo (RS)	Teresina (PI)
Fortaleza (CE)	Pelotas (RS)	Uruguaiana (RS)
Foz do Iguaçu (PR)	Ponta Porã (MT)	Vitória (ES)
Ilhéus (BA)		

- Item 12 — Indicar local e data em que está sendo feito o requerimento e assinar.

OS DEMAIS CAMPOS SERÃO PREENCHIDOS POR FUNCIONÁRIOS DO GABINETE DO MINISTRO.

