

議論の総括

竹田洋一 (国立天文台)

本研究会の最後を締めくくるにあたり、30分程度の時間でしたがディスカッションの時間が設けられ、出席者の中で意見の交換を行いました。ここで取り上げられたのは「太陽物理学と恒星物理学の間に横たわるギャップの問題」と「今後の両者の交流に向けての進め方」の二点です。私見も交えますが、以下に簡単にまとめます。

1. 分野間のギャップの問題

太陽分野と恒星分野では研究の取り組み方や価値判断における厳然とした違いが存在することは事実として認めなければならないでしょう。恒星研究者から見たら太陽研究はあまりに細かいところに向かい過ぎているように見えますが、一方逆の立場からは恒星研究はいい加減な所で満足している学問のように見えるかもしれません。つまり「理解」という言葉の意味が太陽と恒星ではかなり異なったレベルになっているように思われます。(ただこれはよく考えてみれば十分納得できることで、太陽分野の研究者は世界中の全員が同じ一つの天体の解明に取り組んでいるのですから、オリジナリティを出そうと思えばより良いデータとより精緻な解析でより深い目標を定めて邁進する方向に進むのは自然な流れと言えます。)

また太陽研究者の会合に顔を出すと、発表で活動現象のムービーが映し出されたときに会場から「オオ～」とどよめきが起こることがありますが、門外漢から見ると一体何がすごいのかわかりかねるのです。ですから太陽分野の皆さんは細かい現象を見分けるデリケートな目が長年の内に養われているようで、太陽研究にはおそらくその種の「違いのわかる」センスが必須になっているのだという気がします。

こう見ると、両者間の大きなギャップの存在は必然的なもので、もはやどうこう言っても仕方ないことであり、自分野の殻にこもってはいは永久に解決しないように思われます。むしろ最初から異国の文化だと割り切って、初心に帰って外国語を学ぶつもりで積極的に先方の文化にとけ込む努力をすることが相互理解に向けて最も必要とされることではないでしょうか。実際これはお互いにとって自分達の専門分野を新たな視点から見直すための好機にもなるはずです。近い将来両分野を股にかけて活躍するバイリンガル研究者が数多く出現するようになったとき、太陽分野と恒星分野の真の交流が成し遂げられたと言えるでしょう。

2. 今後の交流に向けて

太陽研究者と恒星研究者が座を共にするこの種の集まりで世界的によく知られたものは「Cambridge Workshop: Cool Stars, Stellar Systems, and the Sun」(通称 COOL STARS) があります。(以下に添付する資料はこの会議の説明のために使ったものです。) この大がかりな国際会議は米欧のみで交互に開かれてきたものですが、別の大陸での開催も歓迎する方向になってきているようでもあり、今回我が国の両分野の研究者が集まったのを機に、近い将来日本に招致する可能性について皆さんの意見を伺いました。

ですが、これは従来の実績では400名もの参加者を集めてパラレルセッションも実施される相当大きな会議ということもあり、今回が実質的に最初の顔合わせをしたばかりの段階で招致を考えるのは時期尚早ではないか、もっと国内でこの種の研究会を重ねて力を付けてからにした方がよい、あまり多人数では十分に互いの顔が見えずに効果が上がらないので国際ワークショップを考えると五十人から百人程度のものが適当では、などの意見が出ました。また、大きな会議の招致を考えるのであればまず一度それに参加してどのようなものか事前に調べておくべきではないか、との指摘もありました。

従って、国際会議のことはしばらく置いておいて、まず国内での太陽恒星研究会を重ねて開いて両者間の交流をこれからも続けて行こう、ということで皆の意見が一致してお開きとなりました。

以上。

「太陽物理学と恒星物理学の相互交流と将来的展望」研究会
(2011年12月26-28日:東京大学)

Cambridge Workshop
“Cool Stars, Stellar Systems, and the Sun”
(通称「Cool Stars」)について

竹田洋一(国立天文台)

COOL STARS

Cambridge Workshop “Cool Stars, Stellar Systems, and the Sun” (通称「Cool Stars」)は太陽分野と恒星分野の両者の集いを主眼とした歴史ある研究会として有名

ただプログラムを見る限り、最近では太陽分野の参加者はやや減ってきてどちらかといえば恒星に比重を置いた性格になってきているようだ。

Rationale

Cool Stars 15 (2008)

The origin and the evolution of stars and planets; focuses on major open cool-star topics such as angular momentum evolution, magnetic field generation and the appearance of hot winds, and the dynamics of very cool atmospheres.

Cool Stars 16 (2010)

Focus on formation and evolution of cool stars, fundamental parameters, cool stars in the time domain, magnetic fields and magnetic activity, and cool stars in the Galactic context.

開催地について(公募で決められる)

- 当初はCenter for Astrophysics のある米国ボストンのケンブリッジで開催されていた
- 2年おきに開催されており、近年は米国と欧州の国が交互に担当している
 - 2008 CS15 スコットランドのセントアンドリュース
 - 2010 CS16 米国シアトル
 - 2012 CS17 スペイン バルセロナ
 - 2014 CS18 最近の慣例では米国内のどこか
 - 2016 CS19 最近の慣例では欧州のどこかの国

しかし「この最近の慣例は変えてもいいので、世界のどの大陸からでも積極的な応募を期待する」とのこと

近い将来のCambridge Workshop「Cool Stars」(たとえば3年後のCS18か5年後のCS19)を我が国の太陽と恒星(+系外惑星)研究者が一緒になって招致することを検討してみてはどうか

開催地は2年前のCOOL STARSの際の公募で決まり、応募した国(研究機関)の代表者が出席してプレゼンテーションなど行い、それをもとに候補の中から委員会が一つを選んで開催地を決定する

Previous Cool Star Meetings

- CS 17- Barcelona June, 24-29 2012
- CS 16 - Seattle, Washington - August, 2010
- CS 15 - St. Andrews, Scotland - July, 2008
- CS 14- Pasadena, CA, USA - November, 2006
- CS 13- Hamburg, Germany - July, 2004
- CS 12- Boulder, CO, USA - July 2001
- CS 11 - Tenerife, Spain - October 1999
- CS 10 - Cambridge, MA, USA - 1997
- CS 9 - Florence, Italy - 1995
- CS 8 - Athens, GA, USA - 1993
- CS 7 - Tucson, AZ, USA - 1991
- CS 6 - Seattle, WA, USA - 1989
- CS 5 - Boulder, CO, USA - 1987
- CS 4 - Santa Fe, NM, USA - 1985
- CS 3 - Cambridge, MA, USA - 1983
- CS 2 - Cambridge, MA, USA - 1981
- CS 1 - Cambridge, MA, USA - 1980

2012年6月24-29日バルセロナ開催のCOOL STARS 17

Welcome to Cool Stars 17!

<http://www.coolstars17.net/cs17/1/Welcome>

The "Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun" (also known as "Cool Stars") have been running for 30 years since the first one, organized by Andrea Dupree, was held in Cambridge Massachusetts in 1980.

Cool Stars is now a well established workshop, which gathers biennially about 400 worldwide experts in Low-Mass Stars, Solar Physics and more recently also Exoplanets, creating an stimulating cross-disciplinary exchange environment in these fields. Cool Star meetings have a long tradition of presenting cutting-edge science, as shown by outstanding results such as the discovery of the first Extrasolar Planet and the first confirmed Brown Dwarf, which were first announced in the Cool Stars 9 meeting celebrated in Florence, Italy in 1995.

Cool Stars 17 will be held at the World Trade Center in Barcelona, Spain, starting with an opening Welcome reception on the evening of Sunday, Jun 24, 2012. Science sessions will run from Monday, June 25 through Friday, June 29, 2012, with the traditional plenary sessions in the morning, splinter sessions in the afternoon focused on topics proposed by meeting attendees, and poster displays with the contributions from all conference participants. Those activities will be accompanied by the also traditional conference dinner, to be celebrated in the House of la Llotja, a place which conceals one of the jewels of Civil Catalan Gothic architecture, and enjoyable excursions to local attractions.

Looking forward to seeing you in Barcelona!



SOC

France Allard, Centre de Recherche Astrophysique de Lyon, France

Mike Bessell, Mount Stromlo Observatory, Australia

Andrea Dupree, Harvard-Smithsonian Center for Astrophysics, USA

Fabio Favata, European Space Agency, the Netherlands

Mark Giampapa, National Solar Observatory, USA

Sheng-hong Gu, Yunnan Astronomical Observatory, China

Nader Haghighipour, Institute for Astronomy, Hawaii, USA

Suzanne Hawley, University of Washington, USA

Leslie Hebb, Vanderbilt University, USA

Moira Jardine, University of St. Andrews, Scotland, UK

Hugh Jones, University of Hertfordshire, UK

Mercedes López-Morales, Institut de Ciències de L'Espai, Spain (Chair)

Iliara Pascucci, University of Arizona, USA

Jenny Patience, University of Exeter, UK

Clara Régulo, Instituto de Astrofísica de Canarias / Universidad de La Laguna, Spain

Ignasi Ribas, Institut de Ciències de L'Espai, Spain

Patricio Rojo, Universidad de Chile, Chile

Jurgen Schmitt, University of Hamburg, Germany

John Stauffer, Infrared Processing and Analysis Center Caltech, USA

Keivan Stassun, Vanderbilt University, USA

Beate Stelzer, Osservatorio Astronomico de Palermo, Italy

Klaus Strassmeier, Leibniz-Institute for Astrophysics Potsdam, Germany

Chris Tinney, University of New South Wales, Australia

Jeff Valenti, Space Telescope Science Institute, USA

Gerard van Belle, Lowell Observatory, USA

Andrew West, Boston University, USA

Hao Yang, Huazhong Normal University, China

Maria Rosa Zapatero Osorio, Centro de Astrobiología, Spain

CoolStars17 Barcelona, Spain

17th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun
June 24-29, 2012

Invited Speakers

Daniel Apai, University of Arizona

Rainer Arlt, Leibniz Institute for Astrophysics

Jacob Bean, University of Chicago

Tim Bedding, Sydney Institute for Astronomy

Martha Boyer, Space Telescope Science Institute

William Chaplin, University of Birmingham

Aaron Dotter, Space Telescope Science Institute

Lyndsay Fletcher, University of Glasgow

H. Moritz Guenther, Harvard-Smithsonian Center for Astrophysics

David Kirkpatrick, California Institute of Technology

Valentín Martínez-Pillet, Instituto de Astrofísica de Canarias

Victoria Meadows, University of Washington

Georges Michaud, Université de Montréal

Sami Solanki, Max Planck Institute for Solar System Research

Guillermo Torres, Harvard-Smithsonian Center for Astrophysics

LOC

Anna Bertolin, Institut d'Espacials de Catalunya (IEEC), Spain

Paca Ciller (Conference Organization)

Josep Colomé, Consejo Superior de Investigaciones Científicas (CSIC), (IEEC), Spain

Ane Garcés (CSIC-IEEC), Spain

Enrique García-Melendo, Fundación Privada Observatori Esteve Duran (FOED / CSIC-IEEC), Spain

Enrique Herrero (CSIC-IEEC), Spain

Alina Hirschmann (IEEC), Spain

Ramón Iglesias Marzoa, Universidad de La Laguna (ULL), Spain

Jordi Isern (CSIC-IEEC), Spain

Mercedes López-Morales (CSIC-IEEC), Spain

Pilar Montes (IEEC), Spain

Juan Carlos Morales (CSIC-IEEC), Spain

Eva Notario (IEEC), Spain

Freddie Pardina (Conference Organization)

Ignasi Ribas (CSIC-IEEC), Spain

CSIC-IEEC



CS18 Proposals

Potential hosts are invited to submit a proposal to the CS17 SOC to hold the next workshop, CS18. Please answer the questions below to the best of your ability. The proposals will be evaluated by the SOC prior to CS17, and you will be asked to make a presentation of your proposal at an SOC meeting during the CS17 workshop. The winning proposal will be announced at the CS17 banquet.

This meeting has certainly grown from the original small group of attendees at CS1, and now attracts about 400 scientists. It has become one of the (if not the) foremost meeting to discuss advances in cool stars. Attendees now expect features such as email access and banquets, in addition to the ever outstanding scientific results. Generally rooms are required for a plenary session, for breakout sessions, and a poster display area that could run to at least 350 posters. A group of dedicated people is needed to produce the Workshop. It has been traditional that the Chair of the SOC comes from the host institution.

Generally funds in excess of the registration fees from the participants are required to aid the attendance of some speakers, young postdocs, and graduate students. Support for the publication and group activities is also usually sought from outside sources. Such funds are obtained from the host institution, national resources, professional societies, and the commercial sector.

The meetings have traditionally alternated between both sides of the Atlantic (United States and Europe), but we are hoping to extend this tradition and proposals from other countries/continents are strongly encouraged.

応募の際に必要な記載事項

To apply, please email a pdf file with answers to the following questions to Mercedes López-Morales, chair of the CS17 SOC, SOCchair@coolstars17.net

Host Institution:

Lead scientist(s):

Name, address, email, fax:

Proposed dates of meeting:

Proposed site of meeting:

Meeting/Facility considerations (Hotel, conference center, observatory?)

Transportation considerations (Airports, public transportation, travel time, ease of access etc.):

Rooming/Hotel considerations (Range of facilities/cost):

Potential sources of financial support in addition to registration fees:

Science themes to be emphasized at CS18:

Previous experience in hosting meetings of this size (either within institution or among lead scientists proposing):

Why should CS18 be held here?

Anything else we should know:

Submissions received by May 10, 2012, will receive first consideration.

2010年8月下旬に行われた「Cool Stars 16」

Instructions for contributions to the CS16 proceedings may be found [here >](#)

Cool Stars 16 will be held on the campus of the University of Washington, in Seattle, Washington, USA. The opening reception will be on Saturday evening, August 28, 2010. Science sessions will run from Sunday, August 29 through Thursday, September 2. The morning plenary sessions will focus on formation and evolution of cool stars, fundamental parameters, cool stars in the time domain, magnetic fields and magnetic activity, and cool stars in the Galactic context. As usual, there will be afternoon splinter sessions on topics to be proposed by meeting attendees, and there is also ample space and time planned for displaying and viewing posters.

Poster 11x17: [[PDF](#) - 2MB] [[JPG](#) - 942KB]
Poster 8.5x11: [[PDF](#) - 1.3MB] [[JPG](#) - 618KB]



Sunday, August 29

Poster viewing is available from 1pm - 7pm

Meany Hall

Morning Sessions

Kane Hall Rm. 130

Formation and Evolution

- 9:00 Introduction
- 9:05 - 9:45 Invited talk - Luisa Rebull, Spitzer Science Center, Caltech
[Rotation and Disks in Young Stars in the Spitzer Era](#)
- 9:45 - 10:10 Contributed talk - Sandra Jeffers, University of Utrecht
[Innovative Imaging of the Circumstellar Environments of T Tauri Stars](#)
- 10:10 - 10:35 Contributed talk - Nancy Brickhouse, Harvard-Smithsonian Center for Astrophysics
[Accretion Makes a Splash on TW Hydrae](#)
- 10:35 Break
- 11:00 - 11:40 Invited talk - Isabelle Baraffe, University of Exeter
[Evolutionary models of Cool Stars and Brown Dwarfs](#)
- 11:40 - 12:05 Contributed talk - Beth Biller, University of Hawaii
[Constraining the Evolution of Brown Dwarf Binarity as a Function of Age](#)
- 12:05 - 12:30 Contributed talk - Keivan Stassun, Vanderbilt University
[Extreme Coronal Mass Ejections in Young Low-Mass Stars](#)
- 12:30 Lunch

[Afternoon Splinter Sessions](#)

Physics/Astronomy Auditorium

Monday, August 30

Poster viewing is available from 8am - 7pm

Meany Hall

Morning Sessions

Kane Hall Rm. 130

Fundamental Parameters

- 9:00 Introduction
- 9:05 - 9:45 Invited talk - Martin Asplund, Max Planck Institute for Astrophysics
[The Chemical Composition of the Sun and Solar Analogs](#)
- 9:45 - 10:10 Contributed talk - Sergio Sousa, CAUP, Portugal
[Lithium Depletion in Solar Type Stars: Lithium and Planet Presence](#)
- 10:10 - 10:35 Contributed talk - France Allard, CRAL-ENS
[Stellar Model Atmospheres: From Very Low Mass Stars to Brown Dwarfs](#)
- 10:35 Break
- 11:00 - 11:40 Invited talk - Ignasi Ribas, ICE, CSIC-IEEC, Spain
[Low-Mass Eclipsing Binaries - Observations vs Theory](#)
- 11:40 - 12:05 Contributed talk - Trent Dupuy, IfA/Hawaii
[Testing Theory with Dynamical Masses and Orbits of Ultracool Binaries](#)
- 12:05 - 12:30 Contributed talk - Jeff Coughlin, New Mexico State University
[New Low-Mass Eclipsing Binaries from the Ground and Kepler](#)
- 12:30 Lunch

[Afternoon Splinter Sessions](#)

Physics/Astronomy Auditorium

Tuesday, August 31

Poster viewing is available from 8am - 3pm

Meany Hall

Morning Sessions

Kane Hall Rm. 130

Time Domain

- 9:00 Introduction
- 9:05 - 9:45 Invited talk - Ron Gilliland, Space Telescope Science Institute
[AsteroSeismology of Cool Dwarfs and Giants with Kepler](#)
- 9:45 - 10:10 Invited talk - Lucianne Walkowicz, University of California, Berkeley
[Starspots and Stellar Rotation](#)
- 10:10 - 10:35 Contributed talk - Jacqueline Radigan, University of Toronto
[Extreme Weather on Cool Brown Dwarfs at the L/T Transition](#)
- 10:35 Break
- 11:00 - 11:40 Invited talk - Fabio Favata, European Space Agency
[The CoRoT View of Cool Stars](#)
- 11:40 - 12:05 Contributed talk - Eric Hilton, University of Washington
[The Galactic M Dwarf Flare Rate](#)
- 12:05 - 12:30 Contributed talk - William Danchi, NASA Goddard Space Flight Center
[High Angular Resolution Observations of Episodic Dust Emission From Long Period Variable Stars: Twenty Years of Observations with the Berkeley Infrared Spatial Interferometer](#)
- 12:30 Lunch

Afternoon Poster Session

Meany Hall

12:30 - 3 **Poster Session with Lunch**

Wednesday, September 1

Poster viewing is available from 8am - 5pm

Meany Hall

Morning Sessions

Kane Hall Rm. 130

Magnetic Fields and Magnetic Activity

- 9:00 Introduction
- 9:05 - 9:45 Invited talk - Karel Schrijver, Lockheed Martin Advanced Technology Center
[Solar Magnetic Activity and the Solar-Stellar Connection](#)
- 9:45 - 10:10 Contributed talk - Oleg Kochukhov, Uppsala University
[New Insights into Stellar Magnetism from the Spectropolarimetry in all Four Stokes Parameters](#)
- 10:10 - 10:35 Contributed talk - Gregg Hallinan, University of California, Berkeley
[Auroral Emissions from Ultracool Dwarfs](#)
- 10:35 Break
- 11:00 - 11:40 Invited talk - Ansgar Reiners, Universitat Gottingen
[Magnetic Fields on Cool Stars](#)
- 11:40 - 12:05 Invited talk - Matt Browning, Canadian Institute for Theoretical Astrophysics
[Rotation and Dynamo Action in Fully Convective Stars](#)
- 12:05 - 12:30 Contributed talk - Kevin Covey, Cornell University
[The Age-Activity-Rotation Relation: From Myrs to Gyrs](#)
- 12:30 Lunch

Afternoon Splinter Sessions

Physics/Astronomy Auditorium

Thursday, September 2

Poster viewing is available from 8am - 1pm

Meany Hall

Morning Session

Kane Hall Rm. 130

Galactic Context

9:00	Introduction
9:05 - 9:45	Invited talk - Davy Kirkpatrick, California Institute of Technology New Surveys for Brown Dwarfs and their Impact on the IMF
9:45 - 10:10	Contributed talk - Sarah Schmidt, University of Washington L Dwarf UVW velocities from the Brown Dwarf Kinematics Project
10:10 - 10:35	Contributed talk - Phil Lucas, University of Hertfordshire A very cool, very nearby brown dwarf hiding in the Galactic Plane
10:35	Break
11:00 - 11:40	Invited talk - John Bochanski, Massachusetts Institute of Technology Low Mass Stars in SDSS: Galactic Structure, Kinematics, and the Luminosity Function
11:40 - 12:05	Contributed talk - Nate Bastian, University of Exeter A Universal Stellar Initial Mass Function? A Critical Look at Variations
12:05 - 12:30	Contributed talk - Rok Roskar, University of Washington Implications of Radial Migration for Stellar Population Studies
12:30	Lunch

Afternoon Splinter Sessions

Sunday afternoon, August 29, 2:00-4:45pm

Organizer: Kevin Covey, Cornell University
Title: "Young Stars in the Time Domain"
Website: <http://web.ipac.caltech.edu/staff/plavchan/cs16splinter/index.html>
SOC liaison: Lucianne Walkowicz

Organizer: Lyndsay Fletcher, University of Glasgow
Title: "Solar and Stellar Flares"
Website: http://www.astro.gla.ac.uk/users/lyndsay/CS16/flares_main.html
SOC liaison: Mark Giampapa

Organizer: Ilaria Pascucci, Space Telescope Science Institute
Title: "Planet Formation around M-dwarfs: From Young Disks to Planets"
Website: http://www.stsci.edu/~pascucci/CS16_PF/Home.html
SOC liaison: John Stauffer

Organizer: Emily Rice, American Museum of Natural History
Title: "Juvenile Ultracool Dwarfs"
Website: <http://grad.physics.sunysb.edu/~jfaherty/cs16.htm>
SOC liaison: Adam Burgasser

Monday afternoon, August 30, 2:00-4:45pm

Organizer: Christiane Helling, University of St. Andrews
Title: "Multi-Dimensional Modelling of Substellar Atmospheres"
Website: http://star-www.st-and.ac.uk/~ch80/CS16/MultiDSplinter_CS16.html
SOC liaison: Moira Jardine

Organizer: Jan Røhrade, University of Hamburg
Title: "Frontiers in Stellar X-ray Astronomy"
Website: <http://www.hs.uni-hamburg.de/DE/Ins/Per/Roehrade/cs16/program.html>
SOC liaison: Jürgen Schmitt

Organizer: Gerard van Belle, European Southern Observatory
Title: "The Fundamental Stellar Properties from Optical Interferometry"
Website: <http://www.eso.org/~gvanbell/CS16-interferometry/>
SOC liaison: Chris Johns-Krull

Organizer: Andrew West, Boston University
Title: "Determining the Metallicity of Low Mass Stars and Brown Dwarfs"
Website: http://web.mit.edu/jjb/www/cs_16.html
SOC liaison: Hugh Jones

Wednesday afternoon, September 1, 2:00-4:45pm

Organizer: Rory Barnes, University of Washington
Title: "Habitability of Planets Orbiting Cool Stars"
Website: <http://www.astro.washington.edu/users/rory/coolstars/>
SOC liaison: Neill Reid

Organizer: Niall Deacon, University of Hawaii
Title: "Ultracool Dwarf Science from Widefield Multi-Epoch Surveys"
Website: <http://ifa.hawaii.edu/~ndeacon/cs16splinter/index.html>
SOC liaison: Andrew West

Organizer: Jan Forbrich, Center for Astrophysics
Title: "The Radio-Xray relation in Cool Stars: Are we headed toward a divorce?"
Website: <http://cxc.harvard.edu/cs16xrayradio/>
SOC liaison: Jeff Valenti

Organizer: Kelvan Stassun, Vanderbilt University
Title: "The M4 Transition: Toward a Comprehensive Understanding of the Transition into the Fully Convective Regime"
Website: <http://people.vanderbilt.edu/~kelvan.stassun/cs16/>
SOC liaison: Matt Browning