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KHAGOL
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CONTENTS

No. 76 October 2008

Meeting of IGO Users

IUCAA Girawali Observatory (IGO) operates a 2 metre optical telescope which was opened to scientific community for use in October 2006. Based on the recommendation from IGO Time Allocation Committee (TAC), a two day meeting of IGO users was held at IUCAA during July 22 - 23, 2008. The aim of this meeting was to bring together the Principal Investigators (PIs) of different observing programmes undertaken with IGO in the past three cycles (October 2006 to May 2008), to review the progress made so far. PIs presented their observing programmes, progress made in data analysis, etc. An update on IGO status, some peculiarities of the data taken with IGO and ways to deal with these, and future developments at IGO were also presented. The meeting helped to gather valuable feedback regarding the operations at IGO and provided better insight into the capabilities of the IGO. About 20 observers participated in the meeting including IGO TAC members.

Participants of the IGO Users' Meeting

Congratulations to

J.V. Narlikar, on receiving the ***G.R. Paranjape Award,*** awarded by the Maharashtra Sahitya Parishad, Pune.

T. Padmanabhan, on receiving the ***J.C. Bose Fellowship*** awarded by the Department of Science and Technology, Government of India.

R. Srianand on receiving the ***Shanti Swarup Bhatnagar Prize for the year 2008*** awarded by the Council of Scientific and Industrial Research, Government of India.

ICTS – IUCAA Programme on Cosmology with CMB and LSS

JULY to AUGUST 2008

A group photo with the programme coordinators and small representative set of speakers and participants from India and abroad.

Recent advances in exquisite measurements of subtle fluctuations in Cosmic Microwave Background (CMB), the relic radiation from Big Bang, coupled with increasingly extensive maps of the distribution of galaxies spread over billions of light years around us, have refined cosmology into a precision science. An extremely successful six weeks long international programme of schools and workshops on this frontline research area in cosmology was held at IUCAA during July 21 – August 31, 2008. This was a first partnership venture between the newly set up *International Centre for Theoretical Sciences* (ICTS) of the Tata Institute of Fndamental Research (TIFR), Mumbai, and IUCAA. The grand vision and scope of ICTS programmes allowed, what is arguably, the largest international cosmology programme organized in India. The programme coordinators, Tarun Souradeep (IUCAA) and Subhabrata Majumdar (TIFR) are among the increasingly visible younger generation of Indian cosmologists. The scientific organization committee comprised largely of established young international cosmologists – Asantha Cooray (UC, Irvine), Bhuvnesh Jain (U. Penn), Simon Prunet (IAP), Subir Sarkar (Oxford), Sandip Trivedi (TIFR), and the programme coordinators. Besides renowned senior researchers such as, Marc Davis (Berkeley), Joe Silk (Oxford), Lyman Page (Princeton), Francois Bouchet (IAP), Subir Sarkar (Oxford), Ruth Durrer (Univ. Geneva) and Lev Kofman (CITA), most other lecturers were young achievers in their field of research. The median age of lecturers being about forty brought in a youthful flavour that does justice to the new dawn of the precision era in cosmology.

The programmes featured a unique blend of experts teaching young researchers in the schools, as well as, engage in heady scientific deliberations in the workshops. The programme was divided into three sessions – Cosmic Microwave Background Anisotropy and Polarization, Probes of Large Scale Structures, and Link to the Early Universe. Each two weeks long session had nine days of pedagogical lectures followed by a workshop. The unique format of the meeting attracted lecturers from top research institutions worldwide. Other than young Ph.D. students from Indian institutes and universities, the programme had a very sizable fraction of international students from across the globe — US, UK, France, Germany, Japan, Italy and even as far as Argentina and Brazil. The strong response reflects the global recognition of cosmology and IUCAA has always enjoyed the increasing recognition of science in India. The programme exposed Indian young researchers to the forefront of research in this remarkably successful area of contemporary science. All the lecture courses, workshop talks and public talks were video recorded. This excellent resource has been made available for free download from the conference website (given at the end of this report).

The programme also reached out to the public through a series of four public lectures delivered by eminent cosmologists, Francois Bouchet (IAP), Marc Kamionkowski (Caltech), Joseph Silk (Oxford) and Lyman Page (Princeton, USA). The lectures on exciting topics from the frontiers of theoretical and observational cosmology were all well attended.

The long duration of the programme also gave time for the participants to enjoy the cultural and social ambience, and to develop strong bonds between the Indian and international students. The Lalit Kala Kendra, Pune University, advised and assisted the LOC in organizing six high quality cultural programmes during each week. The programmes by the established and emerging talents of culturally rich city of Pune provided the international participants a glimpse of the rich heritage of Indian music and dance forms. Three weekend, day excursions to nearby scenic spots were also organized during the programme. To coincide with each workshop, a special dinner was organized for the participants and the school banquet on August 5, 2008 was sponsored by Scopus (Elsevier). The success of the ambitious programme owes to the unfettered support from ICTS and the excellent organizational capability of the IUCAA staff.

The video and electronic files of lectures and other details are available online at

http://iucaa.ernet.in/Events.html

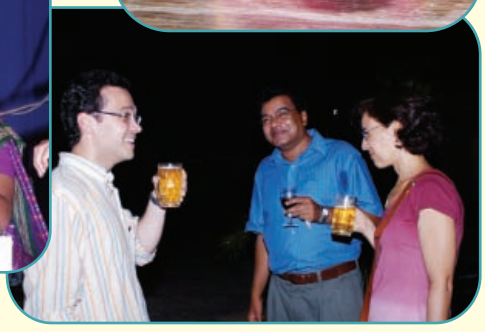
http://icts.tifr.res.in/sites/cmb/Index

Glimpses of the ICTS-IUCAA Programme

ONGOING ACADEMIC PROGRAMMES

Weekend outdoor activities

Some mesmerizing evenings of Music, and Dance



Workshop on Open Source Standards and Software in Libraries: Spotlight on NewGenLib
September 17-19, 2008

Participants of theWorkshop on Open Source Standards and Software in Libraries: Spotlight on NewGenLib

The Workshop on Open Source Standards and Software in Libraries: Spotlight on NewGenLib was held at IUCAA during September 17-19, 2008. NewGenLib, an integrated library automation software has been developed by J. Haravu, Trustee, Kesavan Institute of Information and Knowledge Management (KIIKM), in collaboration with Verus Solutions Pvt. Ltd, Hyderabad. In January 2008, the software was declared to be open source under GNU GPL. The primary objective behind organizing the workshop was to spread awareness about NewGenLib among the library professionals in Pune. For the same reason, preference was given to participants who were keen to automate their libraries and were on the lookout for a good library software.

Eighteen participants representing government organizations, private academic institutions including a non-governmental organization registered for the workshop, which was inaugurated by Naresh Dadhich, Director, IUCAA. M.P. Chirmule, Scientist In-charge, Library, Information Division, National Chemical Laboratory, Pune, delivered the key note address on "*Towards Open Source Library Software Movement*".

The workshop was highly interactive and focused primarily on hands-on exposure, wherein each participant was provided an opportunity to install the software and explore the different modules. Speakers included Bighnaraj Swain (NewGenLib Foundation) and Shubhada Nagarkar, Department of Library and Information Science, Jayakar Library, University of Pune

The workshop was organized by the IUCAA library in association with the NewGenLib Foundation, Hyderabad. The Coordinator was Nirupama Bawdekar, IUCAA.

Welcome to . . .

Kinjal Banerjee, who has joined as a post-doctoral fellow. His areas of research are Loop Quantum Gravity and Cosmology, and the Application of Loop Quantization Techniques.

Maryam Arabsalmani, Tanushree Basu, Charles Jose, Nisha Katyal, Sanved Vinod Kolekar, Sibasish Laha, Dipanjan Mukherjee, and Aditya Rotti, who have joined as Research Scholars.

. . . Farewell to

Sudhanshu Barway, who has joined as a Virtual Observatory Scientist at the South African Astronomical Observatory, Cape Town.

Rajesh Gopal, who has completed the tenure at IUCAA.

Subharthi Ray, who has joined as an Associate Professor at the Department of Mathematical Sciences, University of Kwazulu Natal, Durban, South Africa.

Arman Shafieloo, who has accepted a post-doctoral position at Oxford University, U.K.

X-ray Astronomy School

IUCAA will organize a school on X-ray astronomy during February 1 - March 20, 2009. The school will introduce X-ray astronomy and provide hands-on experience on the analysis and interpretation of X-ray data obtained from X-ray observatories such as XMM-Newton, Chandra and Suzaku. The participants of the school will work on research projects under the guidance of experienced scientists and will have a chance to continue their work after the school in collaboration. Ph.D. students, postdocs and young faculties with interest in X-ray astronomy should apply on plain paper, giving their curriculum vitae with brief description of their current work and a one page write-up regarding their interest in X-ray Astronomy. Ph.D. students should arrange to send a recommendation letter from their thesis advisers. Local hospitality and travel support will be provided by IUCAA. Applications should reach The Coordinator, Core Programmes, IUCAA, Post Bag 4, Ganeshkhind, Pune - 411 007 (e-mail: vch@iucaa.ernet.in) by December 25, 2008. The candidates will be informed of their selection for the school by January 10, 2009.

Applications for IAU Membership

The IAU general assembly (IAU-GA) is scheduled to be held at Rio de Janerio in August 2009. Amongst other things, the selection of new members of the IAU will take place during the IAU-GA. The National Committees scrutinize and forward shortlisted applications from each country to the IAU-GA. The INSA-IAU National Committee is responsible for forwarding applications of prospective members from India.

The INSA-IAU committee invites applications for membership of the IAU from Indian astronomers and astrophysicists. The application should consist of a brief statement (one or two lines) of research interest and a detailed Curriculum Vitae. The CV must include the list of publications.

The applications must reach the committee before December 1, 2008. Applications by e-mail are preferred. Please send your applications as a pdf file to: jasjeet@hri.res.in

or by post to:

J. S. Bagla, (Secretary, National Committee for the IAU), Harish-Chandra Research Institute, Chhatnag Road, Jhusi, Allahabad - 211019, Uttar Pradesh.

(T. Padmanabhan)
(Chairman, INSA-IAU National Committee)

IUCAA-NCRA Graduate School Courses

The IUCAA-NCRA Graduate School (conducted jointly with the National Centre for Radio Astrophysics (NCRA), Pune) is divided into two semesters (four terms) spread over one year. Each term is of roughly eight weeks duration. During the Graduate School, the Ph.D. students (Research Scholars) are taught relevant advanced courses in Physics and are also introduced to courses in Astronomy and Astrophysics (A & A). The Graduate School structure is given below. The number of teaching hours is shown in brackets after each course.

Semester I, Term I, From August second week to October first week.

01. Methods of Mathematical Physics I (21)

02. Introduction to Astronomy and Astrophysics I (14)

03. Electrodynamics and Radiative Processes I (14)

04. Quantum and Statistical Mechanics I (14)

Semester I, Term II, From October third week to December second week.

05. Methods of Mathematical Physics II (14)

06. Introduction to Astronomy and Astrophysics II (14)

07. Electrodynamics and Radiative Processes II (14)

08. Quantum and Statistical Mechanics II (14)

Semester II, Term I, From January first week to February fourth week.

09. Astronomical Techniques I (14)

10. Galaxies : Structure, Dynamics and Evolution (21)

11. Extragalactic Astronomy I (21)

Semester II, Term II, From March third week to May second week.

12. Astronomical Techniques II (14)

13. Interstellar Medium (14)

14. Extragalactic Astronomy II (14)

15. Project Work (During May - July).

16. Topical Course (for earlier batch of students) (< 21)

1. The courses are designed, emphasizing the aspects which are directly relevant to A &A. It is assumed that unnecessary repetition of material, which is already taught at M.Sc. is avoided.

2. The syllabus provides enough avenues for topics which are of "local interest" to be included in the graduate school. This is necessary so that graduate students coming out of IUCAA/NCRA, not only have a comprehensive grasp of the A & A but are also aware of the key research areas in which these two institutions are concentrating at present. Detailed syllabus may be found in the website: http://www.iucaa.ernet.in/→ Academics → Ph.D. Programme.

If any of the Research Scholars from Indian universities/colleges are interested in attending any of these courses, they may contact: The Coordinator, Core Programmes, IUCAA, e-mail: vch@iucaa.ernet.in.

(i) Mobile Planetarium Tour

Naresh Dadhich gives his best wishes to the Touring Mobile Planetarium Programme in the presence of N. Dabholkar. Members of IUCAA, and M-ANIS family were also present

Accepting the request by Narendra Dabholkar, President, Maharashtra Andhashradha Nirmulan Samiti (M-ANIS), IUCAA has given its mobile planetarium for the shows in the state of Maharashtra. M-ANIS is an organization of rational thinkers, that works towards the eradication of superstitions among common public.

The mobile planetarium is being taken to different talukas of the state in a van belonging to M-ANIS. Prior arrangements are made with various schools for conducting the planetarium shows. A full time volunteer accompanies the planetarium. The van also carries a small telescope, and depending upon the time and clarity of the sky, sky shows are also carried out.

The programme is conducted in three or four phases. In the first phase (mid July to end September, 2008), the planetarium has been taken to districts of Pune, Solarpur, Latur and Usmanabad, till date. It would also cover Beed and Aurangabad before coming to Pune in the first week of October.

Two booklets *Postcardatun Vidnyan* (Science Through Postcards) by Jayant Narlikar and *Chala Karuya Akashdarshan* (Let us observe sky) by Arvind Paranjpye have also been made available for the students visiting the planetarium.

The programme started with a planetarium show by the volunteers of M-ANIS for school students on July 16, 2008. Naresh Dadhich flagged off the van.

(ii) IUCAA Promoted Khagol Vidnyan Manch- Astro-Science Platform for school students

IUCAA is promoting Khagol Vidnyan Manch (KVM) in Ambegaon Taluka. Very close to the taluka headquarters at Ghodegaon, IUCAA's two metre telescope is located on Girawali mountain.

KVM is an ambitious project of IUCAA, aimed at the students of rural India to enrich them in quality learning, deriving pleasure of learning and inculcating scientific temperament. Khagol (astronomy) and Vidnyan (science) are used as separate words for this precise reason.

It is envisaged that through this project, habit of scientific thinking would be cultivated among the students in their tender age, that is asking questions about the nature around us and finding answers objectively. It is hoped that after the initial efforts by IUCAA in setting up these KVMs, they would be independent science centres. They are named after Nakshatras (the lunar station of Indian Calendar). The first Manch, to start the activity is given the name as Ashwini, the first Nakshatra, and so on. IUCAA will provide certain basic facilities to kick start, such as books, star maps, a small telescope, etc. IUCAA officials, graduate students and scientists would visit these schools on regular basis.

On September 22, 2008, Naresh Dadhich has initiated KVMs in nine (8 secondary and 1 primary) schools in a simple ceremony that was held at the Panchayat Samiti office in Ghodegaon, organized by P. Mahajan, the Block Education Officer of Ambegaon Taluka. He handed over KVM banners and a set of books to the headmasters of these schools. About 70 headmasters of secondary schools and science/geography teachers of the taluka were also present. The Block Development Officer, K. K. Kohinkar was also present.

Prior to the ceremony, three hour session on

astronomical telescopes and small telescope making programme was conducted by Vijay Mohan and Arvind Paranjpye. Nine telescopes (with 40 mm achromatic lens) were made by the science teachers of KVMs. About 30 science teachers participated in this workshop.

Participants observing the Sunspots

Participants making Telescopes

(iii) Programme for school teachers

For about 15 years, IUCAA has been conducting lecture demonstration programme for school students. During direct interaction of teachers with Naresh Dadhich on the occasion of National Science Day, some teachers expressed that IUCAA might conduct regular monthly programme for the teachers, which he accepted immediately.

After the schools opened for the academic year, August 9, 2008, heads of schools in Pune were invited to discuss the programme, which IUCAA has planned. It was agreed that most of the programme would be related to the curriculum taught to secondary or higher secondary schools. It was further decided that teachers would also give presentations.

On August 23, in the first session, Arvind Paranjpye talked on the solar system and Pluto. It was followed by Samir Dhurde conducting demonstrations on electricity and magnetism.

On September 27, Samir Dhurde discussed atom and its structure. This was followed by presentation by Neha Abhyankar of Jnana Prabodhini on how to do the science projects.

Gathering of teachers, inset Neha Abhyankar

Proposals for holding Workshops/Schools Outside IUCAA

Proposals to conduct workshops/schools in Astronomy and Astrophysics or related areas are invited from university departments/affiliated colleges and the same may be sent to the Coordinator, Core Programmes, IUCAA (vch@iucaa.ernet.in), IUCAA, by March 1, 2009 (for events to be conducted during August 2009 - July 2010), so as to be included in the academic calendar for the next academic year.

The following details should be given while sending the proposals: (i) the title (topic), (ii) duration of the workshop/school ,(iii) topics to be covered and number of lectures in each topic, (iv) the level of audience and their number, (v) the number of resource persons available locally and the number of resource persons expected from IUCAA, and (vi) a description of the facilities available and the budget estimates (clearly stating the support offered by the host university/institute).

It is generally expected that infrastructural facilities and accommodation to the participants as well as the resource persons will be provided by the host institution. Other expenses will be borne by IUCAA. The proposers are encouraged to consult IUCAA faculty while framing the proposal.

Once the workshop/school is approved, IUCAA will nominate a coordinator from its faculty, who will interact with the organiser in relation to academic programme, budget, and identifying and approaching the resource persons.

IUCAA Preprints

Srianand, N. Gupta, P. Petitjean, P. Noterdaeme, and D.J. Saikia, *Detection of the 2175 \AA~ extinction feature and 21-cm absorption in two MgII systems at z~1.3*, IUCAA-23/08; S.V. Dhurandhar, K.R. Nayak, and J-Y. Vinet, *Optimising LISA orbits: The projectile solution*, IUCAA-24/08; P. Noterdaeme, P. Petitjean, C. Ledoux, R. Srianand, and A. Ivanchik, *HD molecules at high redshift: A low astration factor of deuterium in a solar-metallicity DLA system at z=2.418*, IUCAA-25/08; Rajeev Kumar Jain, Pravabati Chingangbam, Jinn-Ouk Gong, L. Sriramkumar, and Tarun Souradeep, *Double inflation and the low CMB multipoles*, IUCAA-26/08.

Seminars

03.07.2008 Kinsuk Acharyya on *Interstellar dusts and their laboratory analog*; 04.07.2008 Siddharth Malu on *Gibbs' sampling-a computationally efficient algorithm for CMB power spectrum estimation;* 04.07.2008 Kuntal Misra on *Multi-wavelength studies of energetic cosmic explosions;* 04.07.2008 Dawood Kothawala on *Path integral duality corrections to scalar field propagators*; 04.07.2008 Mudit Srivastava on *Opto-mechanical design of an optical fibre based integral field unit (IFU) for 2-D spectroscopy;* 04.07.2008 Sharanya Sur on *Kinetic and magnetic alpha effects in mean-field dynamos;* 17.07.2008 Soumya Mohanty on *Priors in gravitational wave detection*; 18.07.2008 S.Mukherjee on *Boson stars: A geometric approach;* 21.07.2008 Abhishek Rawat on *Studying the properties of intermediate redshift galaxies using large surveys;* 21.07.2008 Arman Shafieloo on *Confronting cosmological models with observations;* 14.08.2008 Gaurav Goswami on *Evolution of a neutron star magnetic field initially confined to the core;* 14.08.2008 Sowgat Muzahid on *Searching for metals in IGM through QSO absorption line;* 22.08.2008 Christopher Tout on *The progenitors of type Ia supernovae;* 04.09.2008 Gianfranco De Zotti on *A simple physical model for young galaxies in the early universe;* 05.09.2008 Bosanta Boruah on *Dynamic beam shaping with programmable differactive optics;* 05.09.2008 Saifollah Rasouli on *Moire technique improves the measurement of atmospheric turbulence parameters;* and 29.09.2008 Patrick McCarthy on *The Giant Magellan Telescope project.*

Visitors expected

October

Raj Bali, University of Rajasthan, Jaipur; Lokesh Kumar Gupta, University of Rajasthan, Jaipur; Saibal Ray, Barasat Govt. College, W. Bengal; A.A. Usmani, Aligarh Muslim University; K. Jotania, M.S. University of Baroda; A. Saha, Sovarani Memorial College, W. Bengal; P. Mukherjee, Presidency College, Kolkata; B.G. Anandrao, PRL, Ahmedabad; P.P. Ghosh, Barasat Govt. College, W. Bengal; B.S. Kushvah, National Institute of Technology, Raipur; C.S. Stalin, IIA, Bangalore; V. Vinu, M.G. University, Kottayam; L. Chaware, Pt. Ravishankar Shukla University, Raipur; G. Bhattacharya, Presidency College, Kolkata; P. P. Divakaran, IMSc, Chennai; B.C. Paul, North Bengal University, Siliguri; A. Chaudhuri, SRTMU, Nanded; N. Wadnerkar, SRTMU, Nanded, and Marcus Kissler-Patig, ESO, Germnay.

November

Suresh Chandra, SRTMU, Nanded; B.K. Kumthekar, SRTMU, Nanded; Anoop Srivastava, D.D.U. Gorakhpur University; and about 35 to 40 people will attend the SALT Board and science working group meetings to be held during November 3 - 7, 2008.

December

D.C. Srivastava, D.D.U. Gorakhpur University; N. Kanda, Osaka City University, Japan; H. Tagoshi, Osaka University; Luo Ali, National Astronomical Observatories, China; Sury Rajah, Durban University of Technology, S. Africa; and P.K. Sahoo, P.O.B.V. College, Patna; Y. Okada, Kinki University, Japan,; P.N. Pandita, NEHU, Shillong.

Visitors

July - September 2008

Shashi Bhushan Pandey, Ashish Asgekar, Nitin Wadnerkar, Michael Little, Santosh Kar, Mohan Ram, Prakash Chand, Ashok Raina, Jagdish Arora, Manoj Kumar, Prem Chand, T.R. Seshadri, S. Vadawale, Ashish Mahabal, Soumya Mohanty, Arunava Bhadra, Shruti Tripathi, Sukanta Deb, Shruti Thakur, Joe Jacob, M. Vivek, A. Pradhan, K. Jotania, Laxmikant Chaware, S.K. Pandey, V. Vinu, J. Hearnshaw, Ninan Sajeeth Philip, A. Omont, A. Ashtekar, Madhavan Varadarajan, Shashikiran Ganesh, U.C. Joshi, T.P. Prabhu, Ashoke Sen, A.K. Sen, M.K. Patil, A.K. Chattopadhyay, R. Godbole, H.P. Singh, P.P. Divakaran, A. Kakodkar, A. Raychaudhuri, Ramamurthy Naidu, R.C. Sobti, J. Dey, M. Dey, A.K. Sood, R. Kaul, Anvita Abbi, S. Rasouli, C. Tout, B. Paul, C.D. Ravikumar, Ashok Das, Nosrotollah Jafari, B.R. Boruah, Gianfrano DeZotti, B. Manna, Hum Chand, B. Ishwar, Samridhi Kulkarni, A. Abdujabbarov, B. Turimov, K.S.V.S. Narasimhan, A.A. Zdziarski, and P. McCarthy,

About 130 participants from India and abroad attended the ICTS-IUCAA Programme on Cosmology with CMB and LSS held during July-August 2008.

For the Younger Minds - 26

T. Padmanabhan

The isotope 7 of berellium is radioactive with a half life of about 53.4 days. When ^{7}Be is heated to few thousand degrees, it is found that its half life changes. Since the thermal energy of the atom at few thousand degrees is significantly smaller than nuclear energies, this fact appears surprising. Give a qualitative explanation for the observed phenomena.

Solution to For the Younger Minds - 25

At some stage if the drunkard has moved a distance r and then takes a step of length l, then the resultant mean square displacement is $[r^2 + l^2]$. In our case, the root-mean-square distance after the first step is l, while after two steps it is $l(1+f^2)^{1/2}$, after three steps it is $l(1+f^2+f^4)^{1/2}$ etc. Summing the geometric series, we find that the root-mean-square displacement after N steps is $R=l(1-f^{2N})^{1/2}(1-f^2)^{-1/2}$. This is the simplest way to tackle the problem and I will leave it to you to work out various limiting cases.

Know Thy Trees-11

Arvind Gupta and Arvind Paranjpye

The Teak

(Tectona grandis)

Sagun (Hindi), Sag (Marathi)

Tectona and teak are both derived from the Malayalam name tekku through the Portuguese teca. Grandis means large in Latin.

About 80 km from Pune, atop the Girawali Hill is perched IUCAA's 2 metre telescope. The hill is full of teak trees. During monsoons, these lofty trees looks handsome with flowers. Teak trees can reach a height of 45 m, but they take sixty to eighty years to reach maturity. The flower spikes and leaves are disproportionately large compared to the tiny greenish-white flowers. The bark is ash coloured and scaly and vertically fissured. For the greater part of the year, the teak looks ugly as the huge hairy leaves are nearly all eaten by a certain type of insect which leaves only the skeletons. During the dry season, every leaf falls, forming a crisp carpet on the ground beneath. But from June until September, when every tree bears new leaves and is crowned with a haze of blossom, they look splendid.

Children take the young leaves and crush them in their hands to stain their palms blood-red. The large leaves are used for improvising rain umbrellas and wrapping parcels. They are also a food for the tussar silk worm.

Teak is easily the finest timber in the world. It is remarkably durable and workable and available in plenty. The seasoned wood does not warp or shrink. Steel nails dug into teak wood do not corrode. The wood is extensively used for ships, railways, etc where timber and iron are in contact. Some of the best and most durable furniture are made from Burmese teak.

Khagol (the Celestial Sphere)
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