



Just note the new
E-mail address of
Greg Middleton:
ozspeleo@iinet.net.au

International Union of Speleology

Union Internationale de Spéléologie

Commission on Volcanic Caves

Feb/Mrch 2010



This Newsletter is send free to members of the commission, and others who are interested in lava-tubes and volcanic caves.

It is not possible to subscribe – but news and information are always (very much!) appreciated.

Honorary President: Dr. W.R. HALLIDAY
wrhbna@bellsouth.net

Web-master: John PINT
ranchopint@yahoo.com
www.vulcanospeleology.org



Chairman & editorial address: Jan-Paul van der PAS
Vauwerhofweg 3
6333 CB SCHIMMERT
Netherlands
jpgvanderpas@hetnet.nl



Contributor for 'Speleological Abstracts' (BBS – Commission of Bibliography – U.I.S.):
Greg MIDDLETON – Tasmania

"WoMOVoc" – project: Worlds Most Outstanding Volcanic Caves
João Paulo Constância
jpconstantia@worldvolcaniccaves.org
http://www.worldvolcaniccaves.org/pages/aboutus/

The commission logo is a design by Conny SPELBRINK, introduced for the symposium on the Canary Islands (1994). She gave the approval to use this for the commission.



Here the latest information about the
Undara Symposium
Australia

**14th International Symposium on
Vulcanospeleology**

Undara National Park, Queensland, Australia
12 - 17 August 2010

Pre-Symposium Excursion to lava caves of
Western Victoria
7 - 10 August 2010

Full details and booking forms at:

<http://ackma.org/14VSC/>

In case of further information
Greg Middleton
PO Box 269
Sandy Bay, Tas.
7006 Australia

Just note the new
E-mail address of
Greg Middleton:
ozspeleo@iinet.net.au



Just some notes, remarks & information

New e-mails:

Greg Middleton ozspeleo@iinet.net.au
J.P. Constancia jpconstancia@me.com

Iceland - Árni Stefánsson

Had meeting with Environmental Institute. Restoring a cave on Snæfellsness and make it accessible to the public. Introducing the 'Þríhnúkagígur' project to the government. See article, notes and his book about this in this newsletter.

Authorization of articles to be put on the web-site of John Pint

Apparently there were some problems about the authorization to put articles on the web-site. Names as MOU came up. It turns out it will be wise to ask permission (or give this) in case you want an article on the site.

Bill Halliday ...

Is working on a book about Pseudokarst, and numerous other publications. However, he had recently a very serious eye-problem, hindering tremendously. Hopefully this will be over a.s.a.p.! Bill, the best!

Bill also reports ...

How to get his paper at the Oct. 2009 GSA Meeting:
- Go to Geological Society of America home page
- Than to Abstracts
- Than to October 2009
- Than to paper 66-4
- Than to "Handouts".

Next symposium on Pseudokarst

Pseudokarst 12-16 May 2010 - Germany Saupsdorf
www.hoelenforschung-dresden.de/symposium

**About the 14th International Symposium on
Vulcanospeleology - Australia**

Here the first information
and dates of the coming
symposium on VULCANO
SPELELOGY in August
2010 in AUSTRALIA.
(info November 2009)



G'day Vulcanospeleologists

Apologies for not getting back to you sooner to confirm the Symposium dates. I had hoped to have a webpage up by now but until we can finalise virtually everything there seems little point in providing partial details. However, some of you may wish to start planning vacations, making airline bookings, etc so I thought I should at least give you the details as to dates. We have had to put the excursion on before the Symposium; not our preferred arrangement.

The program is to be as follows:

FRI 6 AUG Pre-Symposium Excursion. Participants arrive in Melbourne, Victoria - stay overnight. (We will suggest some hotels/motels)



SAT 7 AUG Excursion Day 1. 09:00 Participants depart by bus for Western Victoria.

SUN 8 AUG Excursion Day 2

MON 9 AUG Excursion Day 3

TUE 10 AUG Excursion Day 4. Participants return to Melbourne; stay overnight.

WED 11 AUG Excursionists fly Melb. - Cairns. Non-excursionists arrive Cairns. Stay overnight. (We will suggest some hotels/motels)

THU 12 AUG 09:00 Participants meet at departure point for bus; travel to Undara. Symposium Day 1.

FRI 13 AUG Symposium Day 2

SAT 14 AUG Symposium Day 3

SUN 15 AUG Symposium Day 4

MON 16 AUG Symposium Day 5 - end

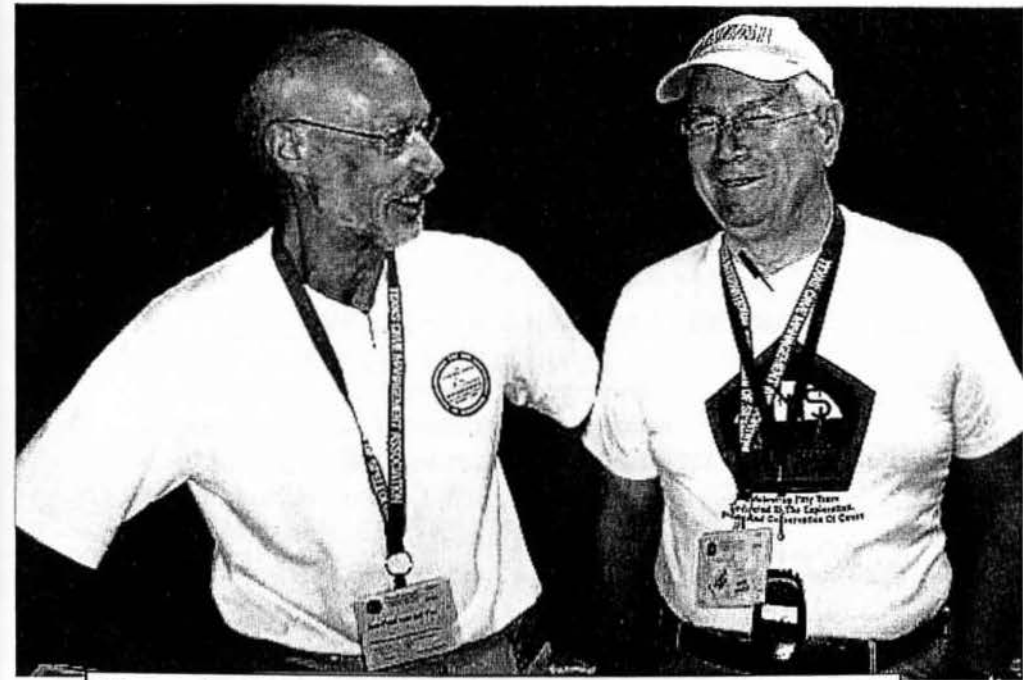
TUE 17 AUG Participants by bus to Cairns as early as practicable (depart ~08:00; ~4 hour trip). If you do wish to leave Cairns that day we suggest you do not book a domestic flight leaving before 14:00 or an international flight leaving before 15:00.

I hope that is of some help. We do plan to get the website operational within the next 6 weeks - you will be the first to hear when it is on line. It is possible that we will need to impose a limit of 60 full participants for logistical reasons; if so early booking will be an advantage.

From 20 Oct. I will be in Madagascar and uncontactable until mid-November. Hope to get back to you soon after I return.

With best wishes,
Greg Middleton

Greg Middleton
PO Box 269, Sandy Bay, Tas. 7006 Australia
14th International Symposium on Vulcanospeleology Organising Group



Here a picture, ©John Pint, taken during the U.I.S. Congress. To the right Bill Halliday, our honorary president. Left J.P. v.d. Pas.

Just two months after the U.I.S. Congress in the U.S.A. (July 2009) another highly interesting meeting was hosted by NCKRI about volcanic caves - October 2009. Regrettably very short time for many (certainly myself) to return to U.S.A. again. Of course our Bill Halliday participated. Here a list of the lectures. This list gives at least addresses in case you are interested in the mentioned lectures.

2009 Portland GSA Annual Meeting (18-21 October 2009)

Session No. 66

Sunday, 18 October 2009

1:30 PM-5:30 PM, Oregon Convention Center: A106

**Volcanic Caves: Geological and Microbiological Terrestrial
Analogues of Potential Extraterrestrial Conditions (GSA Planetary
Geology Division; GSA Geobiology & Geomicrobiology Division;
National Cave and Karst Research Institute; NASA)**

George Veni and Carlton C. Allen, Presiding

Paper # Start Time

- 1:30 PM Introductory Remarks
- 66-1 1:40 PM LAVA TUBES: THE VIEW FROM THE OUTSIDE LOOKING IN: **HON, Ken**, Geology Department, University of Hawaii at Hilo, 200 W. Kawili Street, Hilo, HI 96720, kenhon@hawaii.edu and **GANSECKI, Cheryl**, Volcano Video Productions, Box 5150, Hilo, HI 96720
- 66-2 1:55 PM LUNAR LAVA TUBES – THE PROMISE OF NEW ORBITAL DATA: **ALLEN, Carlton C.**, NASA Johnson Space Center, Houston, TX 77058, carlton.c.allen@nasa.gov
- 66-3 2:10 PM FIRST OBSERVED ENTRANCES INTO MARTIAN TUBULAR CAVES: **CUSHING, G.E.**, Astrogeology, U.S. Geological Survey, 2255 N. Gemini Dr, Flagstaff, AZ 86001, gcushing@usgs.gov
- 66-4 2:25 PM RHEOGENIC CAVES AND CAVERNOUSE STRUCTURES OF KALAUPAPA PENINSULA, MOLOKAI ISLAND, HAWAII, USA: A MARS ANALOG REVISITED: **HALLIDAY, William R.**¹, **OKUBO, Chris H.**², **KEMPE, Stephan**³, **GARMAN, Michael**⁴, **GARMAN, Sherry**⁴, and **WYNNE, J. Judson**⁵, (1) Commission on Volcanic Caves, International Union of Speleology, 6530 Cornwall Court, Nashville, TN 37205, wrhbna@bellsouth.net, (2) Astrogeology Science Center, US

Geological Survey, 2255 North Gemini Road, Flagstaff, AZ 86001, (3) Institut fur Angewandte Geowissenschaften, Technische Universität Darmstadt, Schnittspahnstrasse 9, Darmstadt, D-64287, Germany, (4) Garman Engineering Company, 1226 Old Charlotte Pike, Pegram, TN 37143, (5) Biological Resources Division, US Geological Survey, SW Biological Sciences Center, 2255 North Gemini Drive, Flagstaff, AZ 86001

- 66-5 2:40 PM SULFATE MINERALS, HEMATITE, AND SILICA IN BASALTIC CAVES AT CRATERS OF THE MOON NATIONAL MONUMENT, IDAHO: A POTENTIAL MARS ANALOG: **MCHENRY, Lindsay J.**¹, **RICHARDSON, C. Doc**², and **HINMAN, Nancy W.**², (1) Geosciences, University of Wisconsin- Milwaukee, 3209 N Maryland Ave, Milwaukee, WI 53211, lmchenry@uwm.edu, (2) Geosciences, University of Montana, 32 Campus Drive, Missoula, MT 59812
- 66-6 2:55 PM THE ORIGIN AND ZONATION OF SUBLIMATES AND PRECIPITATES IN ACTIVE HAWAIIAN LAVA TUBES: **HON, Ken**, Geology Department, University of Hawaii at Hilo, 200 W. Kawili Street, Hilo, HI 96720, kenhon@hawaii.edu, **BOVE, Dana J.**, U.S. Geological Survey, P.O. Box 25046, MS 973, Denver, CO 80225, **LEE, Lopaka**, USGS, Hawaiian Volcano Observatory, Box 51, Hawaii National Park, HI 96718, and **THORNBUR, Carl**, USGS, Cascades Volcano Observatory, 1300 SE Cardinal Court, Vancouver, WA 98683

- 66-7 3:10 PM DATING OF QUATERNARY ERUPTION EVENTS USING U-SERIES AGES OF LAVA CAVE GYPSUM CRUSTS: **DILLON, Julian R.**, Earth and Planetary Sciences, University of New Mexico, 200 Yale Blvd, Northrop Hall, Albuquerque, NM 87131, dilloj@unm.edu, **POLYAK, Victor J.**, Earth & Planetary Sciences, Univ of New Mexico, 200 Yale Blvd., Northrop Hall, Albuquerque, NM 87131, and **ASMEROM, Yemane**, Earth & Planetary Sciences, University of New Mexico, 200 Yale Blvd., Northrop Hall, Albuquerque, NM 87131
- 3:25 PM Discussion
- 66-8 3:40 PM THE GEOMICROBIAL LIFE OF LAVATUBES: BIOSIGNATURES ON EARTH AND BEYOND: **BOSTON, Penelope J.**, Dept. of Earth and Environmental Science, New Mexico Institute of Mining and Technology, National Cave and Karst Research Institute, Socorro, NM 87801, pboston@nmt.edu, **SPILDE, Michael N.**, Institute of Meteoritics, Univ of New Mexico, MSC03-2050, 1 University of New Mexico, Albuquerque, NM 87131, and **NORTHUP, Diana E.**, Biology, University of New Mexico, MSC03-2020, 1 University of New Mexico, Albuquerque, NM 87131
- 66-9 3:55 PM ALL THAT GLITTERS IS NOT GOLD: MICROBIAL COMMUNITIES THAT MASQUERADE AS MINERAL DEPOSITS: **NORTHUP, Diana E.**¹, **HATHAWAY, Jennifer J.M.**¹, **SPILDE, Michael N.**², **BOSTON, Penelope J.**³, **GARCIA, Matthew G.**¹, and **MOYA, Monica**¹, (1) Biology, University of New

Mexico, MSC03-2020, 1 University of New Mexico, Albuquerque, NM 87131, dnorthup@unm.edu, (2) Institute of Meteoritics, Univ of New Mexico, MSC03-2050, 1 University of New Mexico, Albuquerque, NM 87131, (3) Dept. of Earth and Environmental Science, New Mexico Institute of Mining and Technology, National Cave and Karst Research Institute, Socorro, NM 87801

- 66-10 4:10 PM INVESTIGATION OF ASTROBIOLOGICAL POTENTIAL OF LAVA TUBES IN NEW MEXICO: **DATTA, Saugata**, Department of Geology, Kansas State University, 104 Thompson Hall, Manhattan, KS 66506-3201, sdatta@ksu.edu and **LEVEILLE, Richard J.**, Planetary Exploration, Canadian Space Agency, 6767 route de l'Aeroporto, St-Hubert, QC J3Y 8Y9, Canada, richard.leveille@asc-csa.gc.ca
- 66-11 4:25 PM INVESTIGATION OF NITROGEN CYCLING AND NOVEL MICROBIAL DIVERSITY IN LAVA TUBES OF TERCEIRA, AZORES, PORTUGAL: **HATHAWAY, Jennifer J.M.**¹, **SINSABAUGH, Robert L.**¹, **DAPKEVICIUS, Maria de Lurdes N.E.**², and **NORTHUP, Diana E.**¹, (1) Biology, University of New Mexico, MSC03-2020, 1 University of New Mexico, Albuquerque, NM 87131, jjm@unm.edu, (2) Agrarian Sciences, Universidade dos Açores - Campus de Angra do Heroísmo, 9701-851 Angra do Heroísmo, Terra-Chã, Açores, Portugal



15th International Congress
of Speleology Kerrville, TX
USA July 19-26, 2009

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John J. Pint

Grupo ZOTZ, Guadalajara

Jalisco Mexico

English



This article by our web-master
John Pint is to be found on
www.saudicaves.com
with nice color pictures

BAT STUDY LAUNCHED AT CUATA CAVE

Text and Pictures ©2009 By John Pint

At the urging of bat researcher Leonel Ayala, I organized a visit to Las Cuevas Cuata, nestled in the wall of Tequilizinta Bluff in Santa Rosa Canyon. Leonel has been teaching Cave Biology at the UDG for some time and is now beginning a new project aimed at identifying and monitoring bat populations in all the Jalisco caves he can get to. I told him the biggest bats I've ever seen in Jalisco were in Cuata Cave (wingspan of about 50 cm) and Leonel was immediately interested. Naturally, I didn't mention that the cave is slightly off the beaten track and you have to climb up to it on an exposed



canyon wall 300 meters above the frothing (and filthy) Santiago River.

We headed for the cave on Sunday, October 11, 2009. In the expedition were Mario Guerrero, Memo, Rodrigo Orozco and Bicho, Rodrigo Esparza and Cyntia, Leonel and yours truly.

Because Mario was in the group, our first stop was, naturally, an Oxxo (=breakfast). After that, we drove straight to the new Mirador (Lookout Point) nine kilometers north of Amatlán. From here, in the morning light, you can clearly see Las Cuevas Cuata, far far away in the canyon wall.

Next, we drove to La Taberna and began the long hike to Tequilizinta. The moment we left the path to head to the cave, we crossed a wide area full of maleza (underbrush) and pesky rocks you could easily trip over. Here Rodrigo and Cyntia gasped. "Can't you see this is an archeological site?" they shouted, immediately pointing out various ancient constructions all around us. It sure is nice to have archeologists along on a caving trip!

New branches have been placed in front of La Madriguera de los Lobos (Wolves' Den Cave), making it easy to start the cliff-hanging walk up to Cuata.

Upon arrival, Mario and Bicho immediately located a geocache hidden here over two years ago. We had fun taking goodies out of the bottle and replacing them with new junk.



Leonel then set up a net and in nothing flat caught a little bat which he identified as *Balantiopteryx plicata*, the Grey Sac-Winged Bat.

A big altar still stands in the entrance room of the cave and anyone who doesn't know the curious history of Cuata and Tequilizinta should read *The Cave at the End of the World*, in English or in Spanish at our Subterraneo site.

While Rodrigo and Bicho investigated the living creatures of the cave, Leonel and I crawled to the Black Lagoon (see Cuata Map) to take readings of the cave's water (78F) and air (27C) temperatures and humidity (81%). Along the way, we stopped to listen to normally inaudible bat sounds through a device which Leonel uses to help identify bats

In both of the cave's main passages we found remains of the original walls and ceiling of this lava tube. We saws lava stalactites up to four centimeters long, lava levees and lava dribbles.

This cave and the Wolves' Den immediately below it are the only lava tubes we have so far found in western Mexico.

Curiously, few bats were seen in the cave, even though kilos of insect-eating bat guano has recently been deposited in the entrance room and fresh traces of vampire goo can be seen everywhere deeper inside the cave. And those big bats? Sorry, they didn't show. Nevertheless, Leonel's survey has been launched and we hope lots of useful information will result.

John Pint

Participants of several symposia (as Korea) have heard the lecture(s) by Ární Stefánsson about the project to transfer a hollow crater into a show cave. The project is now well advanced, and a publication has appeared.



PRÍHNÚKAGÍGUR, a publication describing all aspects of the project to make this cavity into a show-cave (history, status and future).

The author is Ární Stefánsson et al (f.h. Þríhnúka ehf, VSÖ RÁÐGJÖF).

Date of issue Nov. 2009, in the Icelandic language, with 2 pages English introduction.

Size 30x21 cm (= A-4), 107 pages, 350 grams.

Around 50 pictures and over 50 maps & schematics of the cave and the location, and some 20 small pictures of Iceland and the area.

No ISBN number, no price (and availability) known.

This publication contains a CD-rom with fascinating pictures about the project.

Þríhnúkagígur

The picture here will be depicted very badly. Lower right a caver with measuring equipment, center below a group of cavers on the bottom of the cave, center top a sky-light with the entrance – some 170m (500 ft) higher.



Árni B. Stefánsson
Kambsveg 10
104 Rvk

Accessibility of Þríhnúkagígur English summary

Introduction

Þríhnúkar, meaning three peaks, is a prominent landmark, standing against the sky on the highland edge, just southeast of the capital area. The most northeasterly of the peaks is a small spatter/cinder cone, standing about 35 m higher than its surroundings. In the top of this cone is a funnel shaped opening, narrowing to 4x4 m, the entrance of a huge, 120 m deep, bottle shaped volcanic vault, measuring 49x70 m at the bottom. Volcanic passages reach down to the southwest, to a total depth of about 200 m.

I January 2004 an idea was put forward, as to how the chamber could be accessed with minimal impact on the environment and with maximal experience of the visitor. The idea had its roots in decades of thought about protection and conservation of of lava caves and natural protection in general. The first spark ignited at the formal closing of



one of the most decorated lava caves in the world, Árnahellir, and its declaration as national monument in 2002. The idea came among other things, from the thought, that it is not enough to lock and gate caves, if a consensus is to be reached, selected caves must be opened to the public.

The idea was well received, in fact so well, that a non profit firm, Þríhnúkar ehf was established. The purpose of Þríhnúkar ehf was threefold. 1. Protection of the somewhat damaged surface environment. 2. To ensure the safety of passers by. 3. To attack the paradoxes and to answer some complex questions and solve whether and how this could possibly be done.

Þríhnúkar ehf consists of three individuals, Árni B. Stefánsson a caver, Björn Ólafsson and Einar K. Stefánsson both experienced mountaineers, which see their role as some kind of a social service, protection of nature and prevention of accidents. The three have apart from Einar leading the project, not accepted salary for their work. Weight has been laid on public relations and from the beginning people in general have been as well informed as possible.

Intriguing paradoxes have been looked into and an ambitious task has been completed. Trust and patience of interested parties and supporters has been invaluable. Being a bit too ambitious on the last run Þríhnúkar ehf have come out in a negative balance.

Indeptness

Since the first descent in 1974 hundreds of people have supported and lent a hand. First in exploring and later doing research and conserving the Þríhnúkagígur crater. The exploration and survey of the crater in 1991 would not have been possible without a generous support of several firms, two rescue squads and the unselfish contribution of many individuals. The present project has enjoyed a generous financial support from Althing, the Icelandic State, the municipality of Kópavogur, the city of Reykjavík, Burðarás and the Reykjavík Energy Supply. It also has enjoyed the help of the rescue squads of Reykjavík and Kópavogur, the wellwill and discount of firms, as well as the help of hundreds of individuals.

Second International Conference on Granite Caves
June 1-4 + 5-7, 2011, Sweden, Nynäshamn
<http://www.speleo.se>

12th International Symposium on Pseudokarst
May or June 2013, Spain, Vigo/Tui
(Clube Espeleológico Maúxo)

More about caves on the Moon

Via Greg Middleton came this article on 'Moon Caves'.
Lately many articles appear on this topic.
To get the 'best' pictures look on
<http://new.nationalgeographic.com/news/2009/10/091026-moon-skylight-lunar-base.html>

First Moon "Skylight" Found -- Could House Lunar Base?

Brian Handwerk
for National Geographic News
October 26, 2009

A "skylight" found on the moon's surface could provide access to a cozy underground shelter for future humans on the moon, scientists say.

Japan's Kaguya spacecraft recently captured pictures of the curious dark hole, which may open onto a large underground lava tube.

Scientists have long searched for easy access to lava tubes on the moon, since the lunar caves hold promise as natural shelters, noted Junichi Haruyama, of the Japan Aerospace Exploration Agency's Institute of Space and Astronautical Science.

"Lava tubes ... provide ready-made protection from the harsh lunar environment: meteorite bombardment, radiation from space, and the large changes in temperature through the lunar day," Haruyama said.



Going Underground

On Earth, lava tubes form after volcanic eruptions, when underground "rivers" of flowing lava run out and leave behind empty channels in the rock.

When a section of the tube's roof erodes or otherwise collapses, a "skylight" hole may be created.

Researchers believe the moon's volcanoes were active until about three billion years ago, although recent data from Kaguya indicate there might have been volcanic activity as recently as 2.5 million years ago.

Due to the moon's volcanic past, scientists have long expected that lava tubes exist in the lunar underground.

But even with decades worth of pictures from various lunar orbiters, no skylights had ever been spotted. That's because the holes can be difficult to distinguish from craters when seen from orbit.

(See moon pictures taken by a 1960s lunar orbiter and the first moon pictures from the currently operational Lunar Reconnaissance Orbiter.)

Kaguya took high-resolution pictures of the entire moon from December 2007 to June 2009. Pictures taken in May 2008 finally revealed a skylight in the moon's highly volcanic Marius Hills region. The JAXA team analyzed several images of the same dark spot taken at different times of day and used the changes in shadows to calculate the newfound spot's depth.

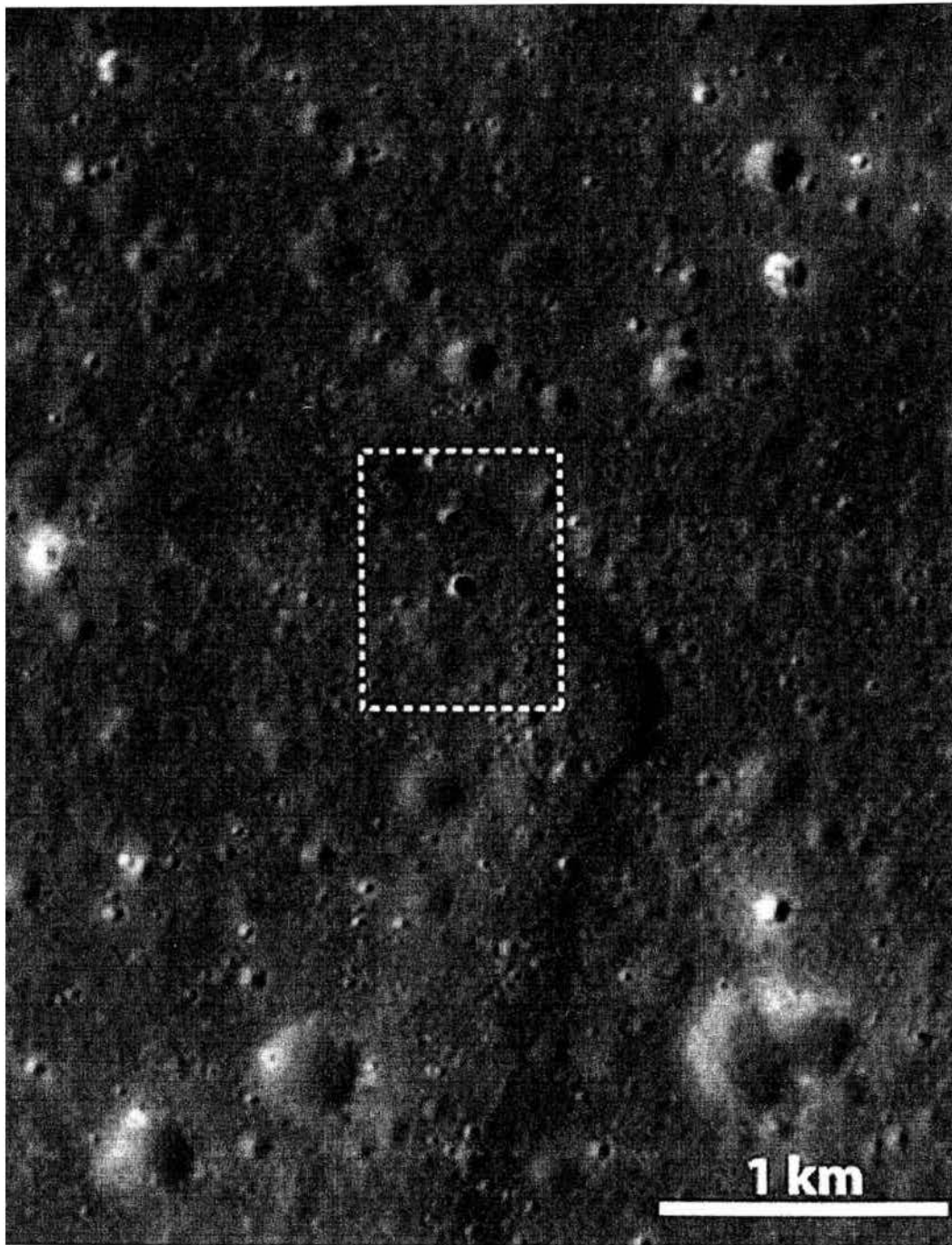
The hole appears to be as much as 289 feet (88 meters) deep—too deep to be one of the moon's many impact craters, Haruyama and colleagues report in a study set to appear in the journal *Geophysical Research Letters*.

Provocatively, the 213-foot-wide (65-meter-wide) hole is in the middle of a rill, a type of sinuous, line-like feature that meanders across the moon.

Rills are thought to be the surface evidence of underground channels that once carried ancient lava flows and may now house empty tubes.

If the skylight does provide entry to an interior cavern, the study suggests, the cavern should be a minimum of 1,214 feet (370 meters) wide.





Natural Protection

Andrew Daga, of consulting firm Andrew Daga & Associates, has been researching the feasibility of using lava tubes for lunar bases. (Related: "'Rocket NASCAR,' Moon Base Part of 50-Year Space Vision.")

Any standalone surface shelter, whether rigid or inflatable, would be more complicated, heavier, more expensive, and necessarily smaller than a structure designed to sit inside a protective lava tube, Daga said.

"Nothing that we can build on the surface using reasonably available technologies could provide the same protection as the interior of a lava tube," added Daga, who was not involved with the new study. In addition, such tubes should be safe in the long run, since they've stood the test of time, he said.

Based on a count of nearby craters, Haruyama's team estimates that the skylight's tube was created more than 3.5 billion years ago. That means any areas of the tube still in good condition are unlikely to collapse anytime soon.

Better Moon Landing Target?

Next steps could include sending a robotic rover armed with ground-penetrating radar to take critical measurements, such as the thickness of the moon cave's basalt "roof."

If the idea of underground shelter gains traction, lava-tube locations could join potential water sources and other factors in the debate over just where people should put down roots on the moon.

In fact, the Marius Hills region was proposed as a landing site during the Apollo era and is now under consideration for NASA's Constellation program, which aims to return humans to the moon by 2020.

(Related: "Apollo 11: 5 Little-Known Facts About the Moon Landing.")

"Volcanic regions like the Marius Hills may be good places to find resources on the moon," Haruyama said. That's because the moon's volcanic eruptions created basaltic rock, which could be mined for rare-Earth metals, silicon, and oxygen.

And now, Haruyama said, "we think this cavern could be useful as a lunar base."





Union Internationale de Spéléologie

During the U.I.S. Congress (15th) the statutes of UIS were revised and translated in several languages. Since we have interested persons also in Russia here the rules by UIS. (The Unesco part can be omitted, since ties between UIS & Unesco are stopped).

Статья 6: Комиссии, Рабочие Группы и Комитеты

(a) Комиссии и Рабочие Группы (научные) и Комитеты (не научные) руководимы Бюро.

(b) Организация Комиссий, Рабочих Групп и Комитетов следующая:

1. Департаменты образуются для ответственности за охрану, научные исследования, эксплорацию, документацию и обучение. Департамент управляется Президентом, назначаемым президентами всех Комиссий и Рабочих Групп этого Департамента, после утверждения Генеральной Ассамблеей Союза. Департамент отвечает за представление отчета и предложений Комиссий и Рабочих Групп Союза для последующей передачи ЮНЕСКО.

2. Комиссии отвечают за специальные вопросы в течение четырех лет между регулярными общими заседаниями Генеральной Ассамблеи и возобновляются голосованием Генеральной Ассамблеи.

3. Преобразование Рабочей Группы в Комиссию должно быть утверждено следующей Генеральной Ассамблеей.

(c) Для функционирования Комиссий и Рабочих Групп Бюро рекомендует следующие правила:

1. Деятельность Комиссий, Рабочих Групп и Комитетов должна быть организована возможно более простым образом.

2. Как правило, Комиссии, Рабочие Группы и Комитеты не нуждаются в формальном голосовании для функционирования.

3. Если формальное голосование необходимо, оно должно основываться на принципе один голос от страны-члена, которая активно участвует в работе Комиссии, Рабочей Группы и Комитета.

4. Если Комиссия, Рабочая Группа или Комитет желают организовать деятельность в стране-члене, они должны информировать Генерального Секретаря Союза на предмет получения согласия спелеологической организации этой страны, через делегата этой страны.

(d) Члены Бюро являются официальными членами всех Комиссий, Рабочих Групп и Комитетов без права голоса.

