INSTRUCTIONS FOR U SCO OUTBURST  (31 May 2009)

This version of the instructions has non-public contact information X’d out.
If it is in the AAS directory or advertised on web pages, I’ve kept the contact info intact.

These instructions are for what to do *immediately* upon learning that U Sco is in outburst. Details will vary depending on the date and time of the initial discovery report (and the confidence of that report), so normal judgment will have to be followed for carrying out these instructions.

A key fact is that U Sco will likely rise from minimum to peak in ~6 hours, then decline by ~1 magnitude over the next day or so. That is, the entire peak time is over and gone in under one day. This is what forces us into *fast* response.

U Sco is at J2000 16:22:30.8 -17:52:44. It has a good finder chart at http://archive.stsci.edu/prepds/cvcat/query_processor.cgi?setup_file=varcat.setup.cgi&query_decision=single_record&uid=7729  U Sco should brighten to B=V=K=7.5 mag or so.

(A) IS U SCO REALLY IN ERUPTION?

AAVSO has strong experience at recognizing and validating eruptions, and I must defer to this knowledge. Depending on the nature of the report, the AAVSO might consider recruiting *immediate* verification, but only if there is significant doubt and if that verification can be made on the time scale of under an hour or so. If the eruption report comes from a nonAAVSO source, then still use your best judgment. This question is a tricky one, as we don't want to start the U Sco ToO on a false alarm but we don't want to delay and miss the peak.

A likely means of getting immediate verification is to use the ROTSE telescope system, with scopes in Australia (3a), Texas (3b), Namibia (3c), and Turkey (3d). Each of these telescopes is taking U Sco images once per hour, and these images can be accessed quickly on the net. U Sco is barely visible at quiescence in the better images, but it should be blatantly bright in even poor images if in outburst. On the internet, go to http://www.rotse.net/operation/. Under the ROTSE-III Thumbnail Viewer: select the telescope that is in the dark (see map just above), and then click the box just below labeled 'Extract Images'. This will bring up a screen with a wide view, a central thumbnail, and an image list. They are alphabetized, so scroll down to the images with "usc1622-1752" (or "un21622-1752" with the ROTSE 3d telescope in Turkey) in the name near the bottom of the list. (If the night is cloudy or the particular ROTSE scope is not operational, then the list will be blank or such.) The upper large-scale image contains a header giving the UT of the image. Click on the latest (lowest in the list) U Sco image. This will bring up the thumbnail, which will hopefully be full of stars. U Sco will be in the thumbnail although the exact position jitters around, with the image being flipped from telescope-to-telescope. Here are two views:

![ROTSE 3a (Australia) North-up, east-right, ~10'x10'](080509_usc1622-1752_3a003_czm.jpg)

![ROTSE 3b (Texas) with vertical flip](080503_usc1622-1752_3b002_czm.jpg)

You can quickly check the various ROTSE telescopes, and perhaps get your immediate confirmation or denial of the report.
(B) CONTACT BRAD SCHAEFER and ASHLEY PAGNOTTA at LSU
Ashley and I will take over and/or help with the invocation of the ToOs. Here is our contact information in order of what to try.

(B1) Office phone 225-578-0015 (has answering machine, keep it short)
(B2) Home phone 225-767-5187 (has answering machine, keep it short)
(B3) GRB beeper number, send an email to 2259348325@page.metrocall.com (with "U Sco" in subject line)
(B4) email schaefer@lsu.edu (several sentences is fine)
(B5) If during normal work hours, then call the LSU Physics & Astronomy office at 212-578-2261, and ask that they locate me immediately and urgently, even if I am interrupted in class, with the message being that 'U Sco is erupting'. I will then immediately call AAVSO headquarters (617-354-0484) as needed. If I cannot be reached within a few minutes, then proceed to the next step and continue.

(B6) Call Ashley Pagnotta at 281-686-XXXX (cell phone)
(B7) Send Ashley a short email at pagnotta@phys.lsu.edu

(C) NOTIFY THE IAU CIRCULARS THROUGH DAN GREEN
The IAU Circulars is an effective way to let many people know that U Sco is up. This will allow many people who happen to have some useful capability to observe in a timely manner. Notification of the IAU Circulars is through Dan Green at Harvard with the usual notification channels:

(C1) Send the following email to cbat@cfa.harvard.edu (also green@cfa.harvard.edu).
The subject line must be included (i.e., not empty), and *all* html-encoded text must be deleted (i.e., ASCII only). Replace the angle-brackets in the text with the appropriate information (keeping the same format for the UT date/time). Circumstances might require substantial editing of the text.

Subject = "A. B. Lastname (American Association of Variable Star Observers, aavso@aavso.org) reports that A. B. Discovererlastname has discovered the recurrent nova U Scorpii to be in outburst. At <2008 May 12.345> UT, U Sco was recorded with <Observing Method> to be at magnitude <XX.X> mag in the <X>-band. This outburst is known by comparison with the <AAVSO chart or whatever> with J2000 coordinates of 16:22:30.8 and -17:52:44. This is the tenth discovered eruption, with the last being in 1999 (cf. IAU Circ 7113). The nova is <near its peak>, with the entire peak (from quiescence to peak to one mag below peak) occurring inside of one day. This fast event requires fast reaction to get observations near the peak."

(C2) Also report the discovery with the CBAT webpage for reporting discoveries. Go to http://www.cfa.harvard.edu/iau/DiscoveryForm.html. Copy the text from the previous item into the first box. Fill in the second box with the AAVSO full postal address. Then click the 'Send E-Mail' box at the bottom.

(C3) Try calling Dan Green at 617-495-XXXX (leave a message if needed).

(D) INVOKE THE SWIFT ToO
Swift is a NASA satellite with a x-ray telescope and a UV/Optical telescope, and this can be moved to U Sco on the time scale of minutes. We already have a ToO in place, we’ve already had practices, people know what to do, and there is a 24-hour watch for spacecraft operations. With Swift, we will get x-ray and UV spectroscopy and light curves. Here are the instructions for submitting the ToO:

(D1) Go to the Swift ToO request web page at https://www.swift.psu.edu/secure/toop/too_request.htm. Enter the following information in the boxes:

Username = bradschaefer
Password = XXXX
Time Criticality = High Priority
Source Identification = U Scorpii
Source Position RA = 245.6292
DEC = -17.8783
Error = 0.001
Epoch = 2000.0  
Source Type or Description = Other Recurrent Nova  
Redshift = Known, z=0 (12 kpc in the Milky Way)  
GRB Trigger = Leave blank  
Observations most critical to your science goal = Spectroscopy  
Instrument most critical to your science goals = XRT  
Source brightness = Optical, Apparent magnitude= 7.7, Filter = V  
Source brightness = XRT, 50 counts/s  
Requested Observation, Exposure Time Justification: U Sco is expected to be fairly bright and changing very rapidly. So we request minimal exposure times taken repeatedly once each orbit for the first five days.

Observation type = Multiple Observations  
Total Exposure time = 500 seconds  
XRT Mode = Auto  
UVOT Filters = Grism 2 (visible)  
UVOT Filter Justification: For the first days, when U Sco is near its peak, the V grism is selected because the source will be too bright for filter use. As U Sco fades, we will switch to the UV grism or filters.

Science Justification = The recurrent nova U Sco has just gone into eruption, with its rise and fall from peak are all within one day. We request the first Swift observation within 3-6 hours of outburst confirmation. We request the XRT spend 500 seconds per Swift orbit for the first 5 days. We request that UVOT be used with Grism 2 (visible) for the first few days (with slew-in-place and the nominal grism position). A follow-on ToO will depend on the results of the first ToO, but will likely include monitoring of the supersoft phase, its predicted turnoff on day 33, and the eclipse mapping of the super-soft source from days 10-33. (U Sco has deep *total* eclipses every 1.23 days; so eclipse mapping will give the size, position, and thermal structure of the supersoft source.) Primary science for this prototype recurrent nova is to determine the mass ejected and whether U Sco will collapse as a supernova, hence providing an answer to the perennial Type Ia progenitor problem, of large importance for precision supernova cosmology. Fluxes can only be estimated, but U Sco has never gotten brighter than V=7.7 mag in all its past eruptions. Previously, only one X-ray detection of U Sco has ever been made (by BeppoSAX), and that at 20 days after the 1999 peak. Previously, only one UV detection of U Sco has been made (by IUE) and that at 12 days after the 1987 peak. This ToO has already been checked and agreed by Neil Gehrels. This ToO is part of a large international collaboration collecting optical+infrared+radio photometry and spectroscopy with high time resolution. Contacts for this ToO will be either Brad Schaefer (schaefer@lsu.edu), Eric Schlegel (eric.schlegel@utsa.edu), or AAVSO headquarters (matthewt@aavso.org, arne@aavso.org, aavso@aavso.org).

Pre-Approved ToO Programs = leave blank
Then click submit.

Further communication with the Swift Science Operations Team is through swiftnotes@astro.psu.edu.

In addition, we should contact Julian Osborne, who is the leader of the Swift nova community (and on the Swift board for scheduling of ToOs). I think that our Swift ToO will go through anyway, but help with Julian can speed up the response.

(D2) Call Julian at work at 011-44-116-252-XXXX. This is in the UK. The 011 is for getting an international call, and the 44 is the UK country code.

(D3) Call Julian at his home number at 011-44-116-259-XXXX. This is in the UK.

(D4) Call Julian at his cell phone at 011-44-7775-90XXXX. This is in the UK.

(D5) Send Julian a short email to julo@star.le.ac.uk.

(E) INVOKE SMARTS 1.3m PHOTOMETRY ToO

SMARTS is the consortium that operates the Cerro Tololo 1.3m telescope in Chile that has simultaneous optical and IR capabilities. The telescope is run by a resident observer who will interrupt the observing queue for the U Sco observations. They will run through a single scripted observation up to three times on the discovery night. This will return BVRIJHK photometry. After the first night, the ToO instructions are already in place and the normal scheduling procedures will be used. Here is the contact information in order of what to try:
(E1) Call Michelle Buxton at Yale. Her office phone number is 203-432-XXXX.
(E2) Email to michelle.buxton@yale.edu, charles.bailyn@yale.edu. They will know how to invoke the ToO.

(E3) Call Charles Bailyn at Yale. His office phone is 203-432-XXXX.

(E4) If none of the above contacts work, and if it is nighttime in Chile, then we are authorized to contact the observers at the CTIO 1.3m telescope. (This is a one-time opportunity and must be used with good judgment.) In this case, you are to email a set message to the observers as well as to call them to alert them to the email message. Here are the instructions for the email and the phone call:

(E4a) Send an email to
Juan Espinoza <XXXX@ctio.noao.edu>
Alberto Miranda <XXXX@ctio.noao.edu>

with subject "U Sco Outburst program, please start immediately". The contents of the email should read:
"The recurrent nova U Sco has just gone into outburst, and by agreement with Charles Bailyn and Michelle Buxton (who cannot be reached currently, hence this email) we would like to immediately start the U Sco Outburst program. So, please run script UScoOutburst.pro immediately. We would like this script to be run three times tonight, with the first started immediately and the remaining two spread evenly through the remainder of the night. Charles Bailyn instructs that this U Sco Outburst program has higher priority than all other programs except for a 'microlensing superoverride'. We will soon call you at 011-56-51-20XXXX for confirmation."
Sign the email with your own name and with my name (Brad Schaefer).

(E4b) Phone to Chile. This is important as the observers are often too busy observing to read the email, so the phone call has the important purpose of calling the email to their attention. The phone number is
011 - 56 - 51 – 20XXXX
The '011' is for international calls, and the '56' is the Chile country code. This goes to the 1.3m control room. If you have sent the email message and the first phone call has no answer, then keep trying at intervals. The observer might have various reasons for not answering the phone, or it might be cloudy, so keep trying but don't get obsessive about trying the number. When you get them on the phone, the main item is to alert them to read their email for coordinates and instructions so as to start the U Sco Outburst program immediately. Also, you should be ready to assure them that this ToO and the direct contact of the CTIO observers is authorized by Charles Bailyn and Michelle Buxton. Keep this call reasonably short, but answer any questions that the observers might have.

(F) INVOKE SMARTS 1.5m SPECTROSCOPY ToO WITH FRED WALTER
Fred Walter has a long-running program of optical spectroscopy of nova with the Cerro Tololo 1.5m telescope in Chile. The CTIO 1.5m is run by the SMARTS consortium (like for the CTIO 1.3m telescope as above) and also has a resident observer with a queue of observations that is to be interrupted by the U Sco observations. When U Sco goes up, Fred Walter will alert the CTIO observer to initiate the observations. If Fred is not available, then we are to call to the CTIO 1.5m observer directly:
(F1) Office phone 631-632-8232 or 631-632-8229 (leave a message)
(F2) Cell phone 631-252-XXXX
(F3) Email to fwalter@astro.sunysb.edu and XXXX@gmail.com
(F4) Home phone 631-689-XXXX
(F5) If Fred cannot be reached within a reasonable period of time, then we should email to the observers at the CTIO 1.5m telescope. Send an email to:
Jose Velasquez <XXXX@ctio.noao.edu>
Manuel Hernandez <XXXX@ctio.noao.edu>

with subject "U Sco Outburst program, please start immediately". The contents of the email should read:
"The recurrent nova U Sco has just gone into outburst, and by agreement with Fred Walter (who cannot be reached currently, hence this email) we would like to immediately start the U Sco Outburst program. So, please immediately start with a spectrum of U Sco as described below. We would like this script to be run three times tonight, with the first started immediately and the remaining two spread evenly through the remainder of the night. Fred Walter instructs that this U Sco Outburst program "is a high priority time-critical TOO. It will override ANY planned or on-going observation." We will soon call you by telephone for confirmation. Detailed instructions are as follows: U Sco is at 16 22 30.7 -17 52 42.1 (2000). A finding chart (in the low state) is available on the 1.5m scheduling page. In outburst it will
be obvious as the bright star at that position.
   - click on Link to Finding Charts
   - click on SUNY programs
   - Scroll down to the SUNY 08a-11 section
   - Click on the U Sco link (or, the complete link is http://www.astro.sunysb.edu/fwalter/SMARTS/FC/SUNY-11/usco.png).

Upon notification, U Sco is to be observed IMMEDIATELY (i.e, after the current exposure, but if the current integration has more than about 10 minutes remaining it should be stopped and the sequence terminated) with whatever setup is in place. The exposure time depends on the magnitude and the spectrograph setup. The observation description is:

   SUNY 08a-11 1 U Sco 16 22 30.7 -17 52 42.1 19 mag 3x T1 1 T2
   mag is the current magnitude.
   T1 is the exposure time
   T2 is the total time for the observation
   T2 = 9 + (3*T1) (minutes)

Sign the email with your own name and with my name (Brad Schaefer).

   (F6) If Fred cannot be reached within a reasonable period of time, and if it is nighttime in Chile, then we are authorized to contact the observers at the CTIO 1.5m telescope. The phone number of the 1.5m console is:

   011-56-51-20XXXX
   011-56-51-20XXXX

The '011' is for international calls, and the '56' is the Chile country code. If you have sent the email message and the first phone call has no answer, then keep trying at intervals. The observer might have various reasons for not answering the phone, or it might be cloudy, so keep trying but don't get obsessive about trying the number. When you get them on the phone, the main item is to alert them to read their email for coordinates and instructions so as to start the U Sco Outburst program immediately. Also, you should be ready to assure them that this ToO and the direct contact of the CTIO observers is authorized by Fred Walter. Keep this call reasonably short, but answer any questions that the observers might have.

   (G) RECRUIT AAVSO OBSERVERS

   Immediately get the word out to as many AAVSO observers as possible that U Sco is up and needs observations. The AAVSO has well-oiled mechanisms for starting this.

   (H) INVOKE PROMPT ToO FOR POLARIZATION

   Dan Reichart and colleagues have built an array of small telescopes all clustered together on the side of Cerro Tololo in Chile with their purpose being to respond fast and fully automatically to Gamma-Ray Burst transients. With no observer on-site, these telescopes all look at the source getting simultaneous photometry and polarimetry. This PROMPT system can uniquely provide polarimetry measurements. Dan Reichart has agreed to use PROMPT for our U Sco campaign, all under the control of Skynet. When U Sco goes up,

   (H1) Call Dan at 919-667-XXXX or 919-824-XXXX.
   (H2) Call Aaron LaCluyze at 336-684-XXXX.
   (H2) Call Kevin Iverson at 919-265-XXXX.
   (H2) Call Josh Haislip at 252-217-XXXX.
   (H3) Send an email to all four people at reichart@physics.unc.edu, lacluyze@physics.unc.edu, kmi@physics.unc.edu, and haislip@physics.unc.edu. This email should say something like:

   "The recurrent nova U Sco has just gone into outburst, and by agreement with your group, PROMPT should be immediately turned onto U Sco. U Sco is a very fast nova, going from quiescence to peak (V=7.6 mag) to one magnitude below peak all within 24 hours, so fast response is required to catch the peak. On receipt of this email, immediately slew the PROMPT scopes to U Sco. Make frequent observations on the first night, and nightly observations for the next two months as it fades back to background. The primary science (unique to PROMPT) is to get the polarization as a function of time.

   U Sco is at J2000 16:22:30.68 -17:52:42. U Sco rises from quiescence (V~18) to peak
(V~7.7) in under six hours, so fast response is vital to catching the peak. U Sco then fades by three magnitudes in 4 days, so the peak is over and done with on the first night or so. The deep finder chart from the Downes & Shara CV catalog are available at 
http://archive.stsci.edu/prepds/cvcat/query_processor.cgi?setup_file=varcat.setup.cgi and click on the U Sco name."

Sign this email with your name and my name.

(I) INVOKE CBA OPTICAL FAST PHOTOMETRY WITH JOE PATTERSON

Joe Patterson is the head of a large group of top quality amateur CCD time-series observers who specialize in cataclysmic variables (the CBA). They are spread around the world, with many in the southern hemisphere. They will take long runs of fast photometry throughout the eruption. Contact is through Joe Patterson (in New York City), Jonathon Kemp (in Hawaii), and two email exploders.

(1) Call Joe's office phone number at 212-854-3276
(2) If during the daytime and he does not answer the phone, then call the Columbia astronomy department at 212-854-3278 and ask for their help in getting in touch with Joe.
(3) After hours, call Joe's home anytime at 212-678-XXXX
(4) Email a short alert message to Joe at jop@astro.columbia.edu.
(5) Phone Jonathan Kemp in Hawaii at work (808-969-XXXX), home (808-982-XXXX), and cell (808-896-XXXX).
(6) Email a short alert message to Jonathan at XXXX@cba.phys.columbia.edu and XXXX@jach.hawaii.edu. Leave a short message as necessary.
(7) Send the following email message to the two email exploders:
    cba-news@cba.phys.columbia.edu
    cba-chat@cba.phys.columbia.edu

Send the following message:

"U Sco has just gone into eruption! Joe and I are asking for your help in getting good coverage of this fast event. We are asking that you immediately take as long a time series as is reasonable, and continue this for the next month or so. The science is to catch the time when the flickering starts (as a measure of shell transparency), to get the exact shape of the peak (never before seen with any detail and something theorists will use to test models), and to observe eclipse times in the late light curve (to look for period changes since the 1999 and 1987 eruptions).

Here are the details. U Sco is at J2000 16:22:30.68 -17:52:42. U Sco rises from quiescence (V~18) to peak (V~7.7) in under six hours, so fast response is vital to catching the peak. U Sco then fades by three magnitudes in 2 days, so the peak is over and done with on the first night or so. The deep finder chart from the Downes & Shara CV catalog are available at http://archive.stsci.edu/prepds/cvcat/query_processor.cgi?setup_file=varcat.setup.cgi and click on the U Sco name. The AAVSO chart will be better for the peak time and are available at http://www.aavso.org/observing/charts/vsp/index.html?pickname=U%20Sco and you might choose the E chart which has a FOV of 30'x30'. For a comparison star, you might choose the AAVSO star labeled "126" which is roughly 4' east and 0.8' north of U Sco, with magnitudes B=13.83 and V=12.59. Do not worry if you work unfiltered, as your time series data is most valuable for the time-changes in brightness, for which exact bandpasses are of lower importance. Starting perhaps two weeks after the peak, U Sco will start showing valuable eclipses, for which the timings are important. For these, we want ~6 hour runs centered on eclipse times given by JDmideclipse=2447717.56 + N*1.2305631.

U Sco is being looked at with spectroscopy and photometry all the way from Xray/UV/optical/IR. But only the CBA people will be looking with high time-resolution photometry. There are various good unique sciences that only you can do."

And then sign the message with your name and my name (Brad Schaefer).

(J) INVOKE IRTF IR SPECTROSCOPY

Chris Gerardy, Howie Marion, and David Lynch has extensive experience with IR spectroscopy and novae, while they get much time on the IRTF. For the fast response required to get near-peak IR spectra, they will immediately put in a request for Director's Discretionary time to Alan Tokunaga at IRTF. (At the next IRTF application cycle, we will submit a formal ToO program.)

(J1) Call Chris Gerardy (at Florida State in Tallahassee) at 850-644-XXXX
(J2) Email Chris at gerardy@physics.fsu.edu
(J3) Call Howie Marion (at Texas State in Austin) at 512-245-XXXX or his cell phone 512-656-XXXX
(J4) Email Howie at hman@astro.as.utexas.edu

(K) INVOKE LICK IR SPECTROSCOPY THROUGH DAVID LYNCH
David Lynch has regular runs on the Lick telescope devoted to getting IR spectroscopy of nova. So a U Sco eruption is perfect for his regular program. The odds are that his next observing run will be sometime in the upcoming month, but this means that he likely does not need the fast notice. Nevertheless, it is possible that U Sco will go up during or just-before one of his runs, in which case fast notice is good so as to avoid missing a golden opportunity.
(K1) Call up David at 310-336-XXXX
(K2) Send him a brief email at David.K.Lynch@aero.org.

(L) LIVERPOOL & FAULKES NORTH TELESCOPES
Mike Bode and Matt Darnley (Liverpool John Moores University, UK) are working with a group of people in the English midlands (from Liverpool, Keele, Manchester, and Central Lancs) with the Liverpool 2.0-m fully robotic telescope (in the Canary Islands) to get optical spectroscopy and its clone 2.0m aperture Faulkes North Telescope (on Haleakala Hawaii) to get optical photometry. Upon notification, they will immediately get the telescopes onto U Sco, with photometry and polarization. Try to contact both Mike and Matt:
(L1) Call Mike Bode’s office phone at 011-44-151-231-2920 or 011-44-151-231-2919. This is in the UK. The ‘011’ is for getting an international call, and the ‘44’ is the UK country code.
(L2) Call Mike’s cell phone at 011-44-7968-42XXXX.
(L3) Call Matt Darnley’s office phone at 011-44-151-231-2906. This is in the UK. The ‘011’ is for getting an international call, and the ‘44’ is the UK country code.
(L4) Call Matt’s cell phone at 011-44-7808-77XXXX.
(L5) Email them at mfb@astro.livjm.ac.uk, XXXX@gmail.com, and mjd@astro.livjm.ac.uk

(M) INFRARED & OPTICAL SPECTROSCOPY IN INDIA
Nye Evans (Keele University, UK) will be arranging IR (1-2.5µ) spectroscopy on the 1.2m Mt. Abu Telescope in India, as well as optical spectroscopy through the 2.0m Chandra Telescope in India. We have a set of contact people in England and India, and you should just work your way down the list until someone is contacted.
(M1) Email to all the contacts at ae@astro.keele.ac.uk, gca@iiap.res.in, ashok@prl.res.in, orion@prl.res.in, uskamath@iiap.res.in. Make this a short email saying the U Sco is in eruption.
(M2) Call Nye Evans at his office phone at 011-44-1782-733342 or his cell phone at 011-44-7814-42XXXX. This is in the UK. The ‘011’ is for getting an international call, and the ‘44’ is the UK country code.
(M3) Call G. C. Anupama at his office phone at 011-91-80-25530672 or 011-91-25539250 Extn 344 or his cell phone at 011-91-984504XXXX or his home phone at 011-91-80-2665XXXX. This is in India. The ‘011’ is for getting an international call, and the ‘91’ is the India country code.
(M4) Call N. M. Ashok at his office phone at 011-91-79-26314613 at his cell phone at 011-91-942850XXXX or his home phone at 011-91-79-2630XXXX.
(M5) Call Dipankar P. K. Banerjee at his office phone at 011-91-79-26314611 at his cell phone at 011-91-982558XXXX or his home phone at 011-91-79-2686XXXX.
(M6) Call U. S. Kamath at his office phone at 011-91-80-25530672 Extn 310 or his cell phone at 011-91-984558XXXX or his home phone at 011-91-80-4115XXXX.

(N) SUZAKU X-RAY ToO THROUGH DAI TAKEI
Dai Takei (Rikkyo University, Tokyo Japan) has already put in and gotten accepted a ToO for the X-ray observatory Suzaku. He has 5 observations at 20 ksecs each of U Sco (during AO-4). Details at
Suzaku can work fairly fast for an x-ray telescope (perhaps getting on target within 3 days), and Takei is planning observations on days 0, 1, 3, 6, and 10 after the first observation. He is aiming to use Suzaku (both the XIS from 0.2-12.0 keV and the HXD from 15-600 keV) for looking at the hard x-ray component.

(N1) Call Dai on his office phone at 011-81-3-3985-4598. This is in the Japan. The 011 is for getting an international call, and the 81 is the Japan country code.

(N2) Call his cell phone at 011-81-90-6198-XXXX. This is in the Japan.

(N3) Email Dai and his backup contacts at takei@ast.rikkyo.ac.jp and nova@ml.rikkyo.ac.jp and tsujimoto@astro.isas.jaxa.jp and kitamoto@rikkyo.ne.jp. State in this email that U Sco is up and that they should be invoking the accepted Suzaku ToO for U Sco.

(N4) If you have not gotten in contact with Dai, then contact Masahiro Tsujimoto by phone at 011-81-42-759-XXXX. This is in Japan. Dr. Tsujimoto is responsible for the operation of the Suzaku XIS and the ToO would go through him.

(N5) If you still have not gotten in contact with anyone, try Tsujimoto on his cell phone at 011-81-70-5463-XXXX.

(N6) If you still have not gotten in contact with anyone, try Shunji Kitamoto by phone at 011-81-3-3985-XXXX. This is in Japan.

(N7) Or try Dr. Kitamoto on his cell phone at 011-81-90-1584-XXXX.

(O) START SALT ToO THROUGH DAVID BUCKLEY

SALT is a 9.2-m telescope in South Africa which has an unusual mount so that it can only look ~37 degrees from zenith. (This is fine for U Sco, but it will allow only one or two intervals in the night for observations.) David Buckley is the Director of SALT, and he has put in a ToO for U Sco.

(O1) Email David and SALT at dibnob@soao.ac.za and salt@salt.ac.za. Send the following email:

“...The recurrent nova U Sco has just gone into outburst, and David Buckley has a ToO in place to make observations on this event. U Sco is a very fast nova, going from quiescence to peak (V~7.6 mag) to one magnitude below peak all within 24 hours, so fast response is required to catch the peak. On receipt of this email, immediately lookup the ToO and execute it when U Sco gets into the SALT field of view.

U Sco is at J2000 16:22:30.68 -17:52:42. U Sco rises from quiescence (V~18) to peak (V~7.7) in under six hours, so fast response is vital to catching the peak. U Sco then fades by three magnitudes in 4 days, so the peak is over and done with on the first night or so. The deep finder chart from the Downes & Shara CV catalog are available at http://archive.stsci.edu/prepds/cvcat/query_processor.cgi?setup_file=varcat.setup.cgi and click on the U Sco name.”

Sign this with your name and my name.

(P) START CHANDRA ToO THROUGH JAN-UWE NESS

Jan-Uwe Ness (ESA) will either have ToO time on Chandra or will ask for Director’s Discretionary time on Chandra. (He also works with XMM-Newton and has a lot of experience with Swift nova observations.) This process will take a small number of days to work through, but good notice to Jan-Uwe will only get things started faster. Jeremy Drake at the CFA is the ‘second’ for Jan-Uwe in case you cannot get in contact with him. To notify them:

(P1) Call Jan-Uwe’s office phone at 011-34-918131-436. This is in Madrid Spain. The ‘011’ is for getting an international call, and the ‘34’ is the Spain country code.

(P2) Call him at home at 011-34-91632-XXXX. Again, this is in Madrid Spain.

(P3) If you cannot contact Jan-Uwe by phone, then email to him and Jeremy Drake at juness@sciops.esa.int and jdrake@head.cfa.harvard.edu.

(P4) If you cannot contact Jan-Uwe, then call Jeremy Drake at 617-496-7850 (his CFA office).

(P5) If you have not contacted Jan-Uwe or Jeremy yet, then try Jeremy at home (in Boston) on his cell phone at 781-354-XXXX or his home phone 781-646-XXXX.

(Q) ROBOSCOPE DATA WITH KENT HONEYCUTT
Kent Honeycutt (Indiana University) has an automated 1.25-m robotic telescope in Indiana, plus a long track record of monitoring of novae. A problem is the observatory’s northerly latitude, but observations might well be possible for many hours each night if the time of year is OK.

(Q1) Call his office phone at 812-855-6916
(Q2) Email him at honey@astro.indiana.edu

(R) CONTACT ERIC SCHLEGEL TO START THE SWIFT ANALYSIS
Eric Schlegel (U. Texas San Antonio) has a long track record with CVs (and U Sco in particular) and x-ray data analysis (working with Chandra data for many years). So he will be the analyst for the Swift XRT and UVOT data. Eric should be involved with the checking and progress of the Swift ToO, but this does not need to have Eric woken up. Nevertheless, the Swift data is all public domain, so we should act fast for publication. With this, notice to him anytime in the first day or so is fine.

(R1) Call his cell phone at 210-557-XXXX
(R2) Email him at eric.schlegel@utsa.edu and XXXX@yahoo.com

(S) XMM-NEWTON ToO THROUGH MARINA ORIO
Marina Orio (Univ. Wisconsin and INAF, Padova Italy) has a ToO with XMM-Newton to look at novae.

(S1) Call her office at 608-335-XXXX. This is in Wisconsin.
(S2) Call her international cell phone at 011-39-329-408XXXX. This is in Italy. The 011 is for getting an international call, and the 39 is the Italy country code.
(S3) Email her at XXXX@oapd.inaf.it. Make this a short email saying the U Sco is up.