CHANDRA
X-ray Center 60 Garden St., Cambridge Massachusetts 02138 USA

MEMORANDUM

Date: February 26, 2004
From: Scott J. Wolk
To: CDO, MP
Subject: GTO and local GO self management of observations
Re: Lessons learned
Cc: USINT, Ed Mattison, Roger Brissenden
File: `user_lessons_learned.tex`
Version: `1.0`

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1 Introduction

This brief memo serves to encapsulate lessons learned by the first experiment with user approval of ObsID setups. The goal of this project is to lower the load on USINT while maximizing the science return of Chandra by optimizing the setups. This version of the memo serves as a starting point and includes comments from the Director's Office and Mission planning as made during the roll-out in October 2003. A second version is planned which will incorporate comments on this draft and be used for planning operational and software modification for cycle 6.

2 Fundamental Results

Could observers interface with the system and correct and approve their setups?
Yes, except for local people who have as their nominal observers USINTers, all observers made edits and signed off by the Nov 1 deadline. We did answer about 5 help desk tickets. About 3 were software bugs which prevented user access. Only 1 or 2 people needed help using the system. This included one internal user who was using his password for his timesheets page instead of his HEAD account.

Also the system can not handle ObsIDs which show up with less than 2 weeks of lead time. For example an interrupted observation or a DDT/TOO. These need USINT support due to the 30 day lockout required by MP.

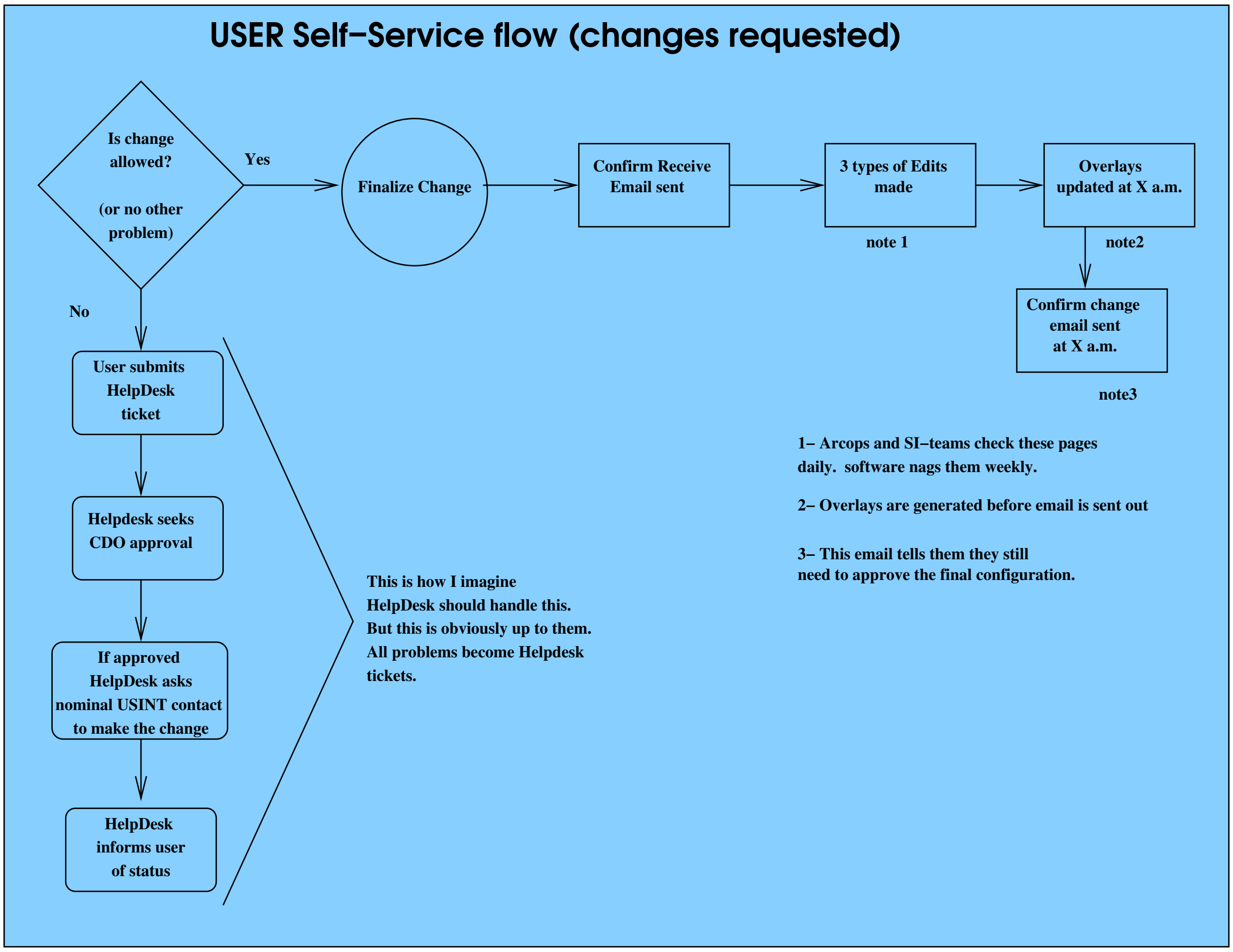
Did this save USINT effort?
Not really. This year as a lot of infrastructure needed to be developed. Next year is a fairer test. Usually 10% of the observations require 50% of the effort by USINT. This will still be true.

3 The Process

The basic flow is summarized in Figure 1.

1. An email is sent to the OBSERVER informing them of a personalized web page. (we can't mail a web page due to spam filters).

2. The web page includes directions, rules and links to the users files. User is directed to help desk in case of problem.
   A) If the problem is a request to change disallowed field this is a standard request to CDO. They



USER Self–Service flow (changes requested)

1– Arcops and SI–teams check these pages daily. software nags them weekly.

2– Overlays are generated before email is sent out

3– This email tells them they still need to approve the final configuration.

This is how I imagine HelpDesk should handle this. But this is obviously up to them. All problems become Helpdesk tickets.

Figure 1: Top level flow in the OCAT update cycle.

approve or disapprove as they see fit. Nominal USINT or CDO makes updates (depending on purview).
B) If the problem is software related swolk is the responsible scientist.

3. The change form only allows changes to certain fields CDO should review this list with MP no later than July 1 for implementation Aug 1. User can approve observation as is or change allowed fields.
4. CUS software checks all changes for limit violation (either OCAT limits, hardware limits or soft limits (change of pointing))
5. After changes are finalized a confirmation of changes is emailed to the user and posted for ARCOPS
6. Edits to the OCAT are made by ARCOPS and SI teams as needed
7. MP overlays are updated overnight.
8. USER is informed that changes are made and APPROVAL is still required.

4 Proposal for cycle 6.

I think the system worked adequately given the confusion over responsibilities during the run up. I consider last year an α test, with this year being the β test. The system should be the same as this year with GTOs responsible for their own sign off. As part of the "release" I propose adding experienced (third observation) imaging only observers next year.

A Proposed time line for cycle 6 follows.

- ∼August 1 congratulatory letter with new process for GOs and warning that next year more will be involved.
- ∼September 1 final source list. → preliminary letters
- ∼October 1 preliminary LTS →preliminary letters for testing.
- ∼October 15 final LTS →send out letters with Nov 1 (really Nov 10) due date.

Lockouts - these depend on following the above schedule. All observations perform before Nov 28 need to be signed off or followed up by USINT.

5 Toolset for USER Interface

This section covers the non-CXCds developed toolset which is developed and used to support these tasks.

5.1 USER

This is the suite of routines called when ocatdata2html is used by an external user. See figure 2 for flow.

ocatdata2html exists in three locations /proj/web-icxc/cgi-bin/obs_ss/ocatdata2html.cgi: This is the USER version
and has additional subroutines (included in the list below) when compare with the other versions. /data/mta4/www/CUS/Usint/ocatdata2html.cgi: this is the USINT version on the secure server.
/home/mta/www/CUS/Usint/ocatdata2html.cgi:this is the USINT version on the non-secure server. These two piece of code are identical. both will be maintained until the transition to the secure server is complete and fully used. Estimate August 2004.

```
# ----------
# subroutine list:
# ---------
# password_check: open a user - a password input page
# match_user: check a user and a password matches
# special_user: check whether the user is a special user
# pi_check: check whether pi has an access to the data
# pass_param: passing cgi parameter values to the next window
# read_databases: read out values from databases
# data_close_page: display data for closed observation
# data_input_page: create data input page--- Ocat Data Page
# pre_submit: preparing the data for submission
```

```
# chk_entry: calling entry_test to check input value range and restrictions
# entry_test: check input value range and restrictions
#restriction_check:  check special restrictions for input
# print_clone_page: print comment entry for clone case
# read_range: read conditions for values
# read_user_name: reading authorized user names
# user_warning: warning a user, a user name mistake
# submit_entry: check and submitting the modified input values
# read_name: read descriptive name of database name
# find_name: match database name to descriptive name
# oredit: update approved list, updates_list, updates data, and send out email
# mod_time_format: convert and devide input data format
# lts_date_check: check ltd_date is in 30 days or not
#
# ----------------------------------
# data/files needed for these programs
# ----------------------------------
#
# /proj/web-icxc/cgi-bin/obs_ss/.Pass_dir/.htpasswd: user/password list.
# /proj/web-icxc/cgi-bin/obs_ss/.Pass_dir/.htgroup: read user names
# /proj/web-icxc/cgi-bin/obs_ss/.Pass_dir/cxc_user: cxc user list
# /proj/web-icxc/cgi-bin/obs_ss/.Pass_dir/user_email_list: list of user/usint list
# /proj/web-icxc/cgi-bin/obs_ss/.Pass_dir/usint_users: list of usint persons
# /proj/web-icxc/cgi-bin/obs_ss/access_list: list of scheduled/unobserved list
# ./ocat_values: a file contains codtion/restriction for the param
# ./name_list: a file contains descritive names for params
# /data/udoc1/ocat/approved: an approved obsid list
# /data/udoc1/ocat/updates_table.list a file contains updated file list
# /data/udoc1/ocat/updates/obsid.* database to save updated information
```

USER Version of Obscat Data Page

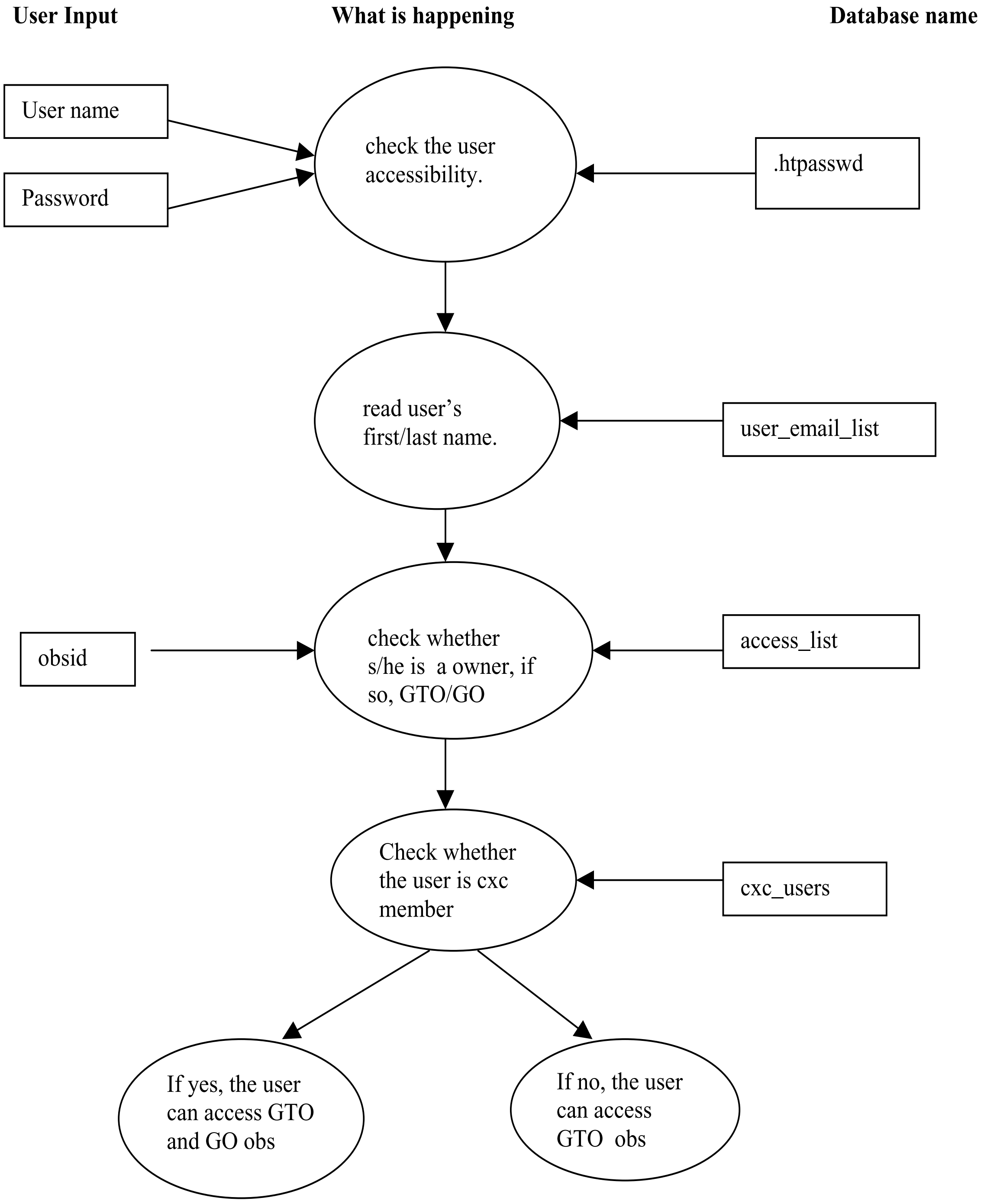


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Figure 2: Summary of the flow of the ocatdata2html webpage.

5.2 CUS

We have developed two tools under the group account "cus" to facilitate communication of directions to observers

We send a contact letter with a password and URL of personalized web based directions. The script *contact_html_only.perl* - produces the web page with the needed content. The script *contact_email2.perl* - generates and send the contact letter. Both use a database similar to self_service_flight.db. The software is all found in: /home/cus/CONTACTLETTERS/EMAIL

5.3 CDO/MP

This draft does not include a thorough investigation of software utilized by this group. The bulk of it is own by MP and includes the pages which generate overlays and the non-editable web views of the OCAT. The Search page is primarily support by CDO and is out of date to the extent that the cycle 5 search filter was non functioning at my last test. The MP usint.pl tool should be upgraded to give cell phone #s for USINTers with cell phones (which is almost all of them).

6 Upgrades

This section summarizes requested upgrades and their status. Development on this set of upgrades started 1 February 2004.

6.1 Upgrades by USINT

1. When more than one observation is listed, there should be only one entry per line. *Requires < BR > added to personalized script - estimate very easy change < 1 hour effort*

2. Why not show the overlays that have already been generated. *Adding link to these pages (both user and usint) - estimate easy change < 1 day effort*

3. Why not give the nominal roll for the week. *In process - estimate easy change < 1 day effort*

4. Highlight items to be checked by the user. *In process for user interface only, not usint - estimate easy change < 3 day effort*

5. Can some items be omitted - e.g., for a normal ACIS observation can the HRC and TOO parameters be omitted. *in process for user interface only, not usint - estimate easy change < 3 day effort*

6. It would really be nice if once users changed the observation parameters, they could click a button and update an overlay to see that they really were happy with the new position/offsets/chip selection/subarray. *Requested. This is a bit more complex, but since MP already has the software it is only a matter of stealing it and hooking it in - estimate 2 weeks if no show stoppers*

7. Is there protection preventing BOTH the observer and PI from changing parameters? *No, a user can continue to edit an ObsID after it is approved, but not after extraction due to the 30 day lockout.*

8. The offset-y shows a value of "0", which I presume is the default for ACIS-I. None of the other offsets show the default. Why is this? *This is because CDO enters an explicit 0 when doing the 0.33 offset on the ACIS-S...i.e it is not the default it is 0 which happens to be the default.*

9. The help on offset-y lists the recommended offset for ACIS-S, which is good, but I believe it is also the default so the help needs to say this, e.g. replace "Recommendations" with "Defaults" *will check and fix.*
10. On the search page I searched on my observations for AO5 and got AO4 - this search must not be working correctly. *this is CDO code but I have put in a request to fix it.*
11. Once I get back to my personalized page I have to re-enter my username to get to the next observation. It would be nice if this wasn't needed. *We have been working on a cookies system on the secure server. this is being tested.*

7 Open issues

This section summarizes open question. I have inserted opinions, but I consider these out of the purview of USINT.

- We wonder about the wisdom of letting people (other than IT members) change ACIS parameters. My guess is that they may either make a mess of it or flock to Usint anyway. *Since we allow user free form setups in RPS, there is no reason that they are more or less prone to make a mess here. However, CDO should review what fields should be user editable.*
- Is it really the intention to allow users to change the SIM focus? *Yes.*
- Should roll preferences really be allowed to change or be added since MP would be unlikely to do anything. Are the preferences tracked in a different way from those originally specified in the proposal? Otherwise MP might conclude that many preferences were missed in generating the original LTS. This issue applies equally to time preferences. *My feeling is that preferences only be changed through CDO approval and then go through the USINT cycle.*
- Changing an existing roll/time constraint is potentially very prone to introduce planning errors (complex issue that requires discussion) *I believe we have agreed that once set, a constraint can only be changed by CDO approval. So USERS need to request the change through CDO and the go the USINT to implement.*

8 Appendix

The following figures are the template instruction letter set to GTO observers. CXC GO (observers) get a similar letter.

Chandra Cycle 5 Observation Approval Process

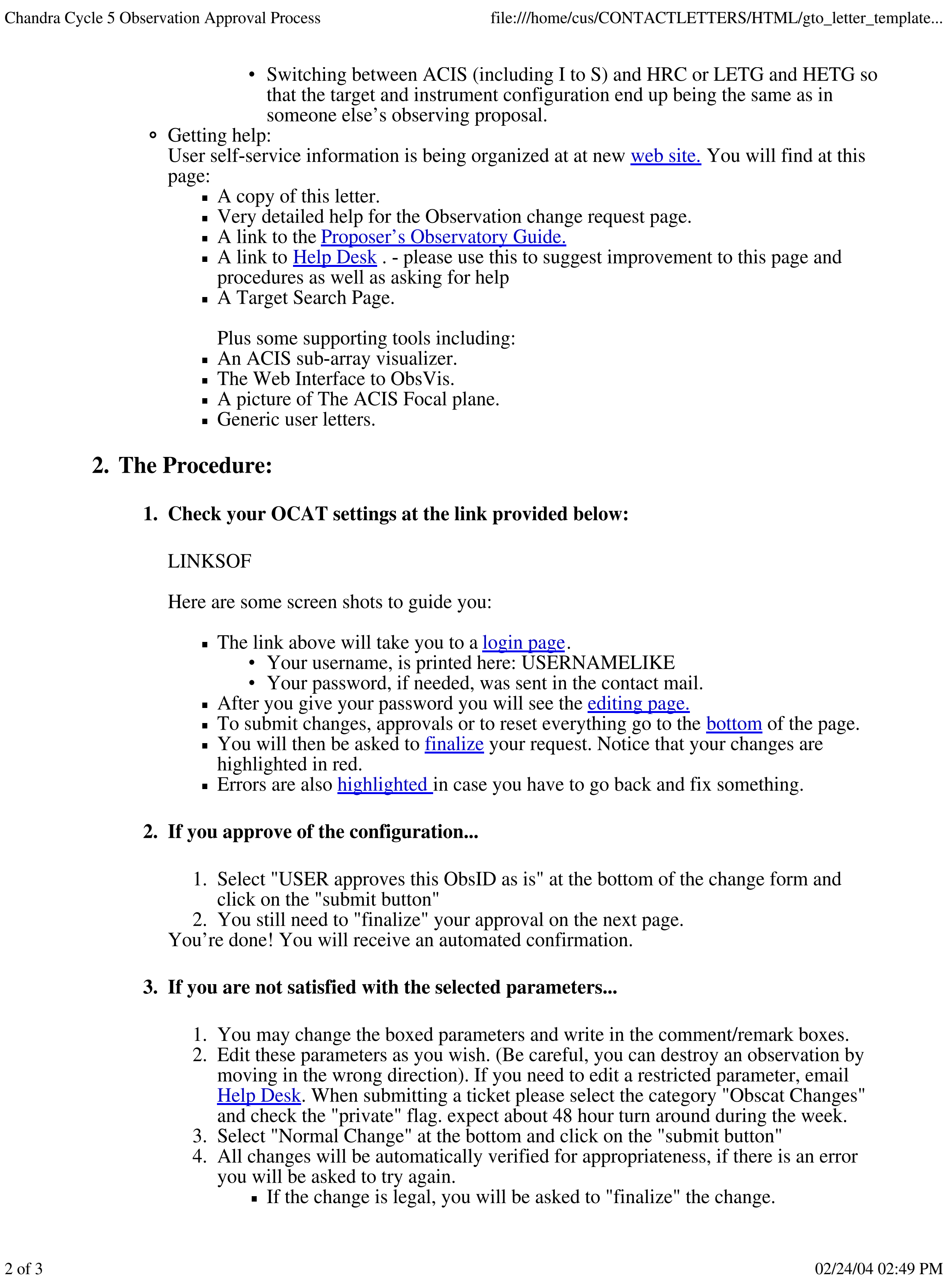
Hello and Congratulations on receiving *Chandra* observing time.

In order to assure that observations were carried out properly during the previous *Chandra* cycles we have used a group of CXC staff members known as the Uplink Support INTerface or USINT to aid the observer in planning and executing the observation. In this capacity an assigned USINT member would individually contact each observer and fully review each observation, making updates to observation parameters as needed. During cycle 5 (Approximately November 2003 - November/December 2004) we will be requiring Guaranteed Time Observers and internal CXC General Observers to verify and approve the observation parameters of their own observations. This letter is to serve as basic instructions for the process. It is divided into three parts:

1. Top level information.
    - Deadlines
    - Allowable changes
    - Getting help
2. The approval procedures.
    - Accessing observation parameters
    - Approving observation parameters
    - Changing observation parameters
    - Unapproving observation parameters
3. Specific parameters to check.

1. Top Level Information

- Deadlines:
  The Deadline for Approvals is October 31, 2003.
  Observations which are not "APPROVED" in time may be postponed for up to one year.
    - About pool targets.
    - If your parameters change as a function of LTS date click here.
- Allowable changes:
  The approval process serves as a FINAL CHECK of the input parameters and to fine tune, NOT as a chance to change the observation or add constraints or preferences not proposed. While the form will accept some new preferences, the priority given to such preferences is low. Allowable changes include:
    - Minor positional changes (less than 8 arc minutes).
    - Minor offset and SIM changes (less than 8 arc minutes).
    - Minor changes to existing constraints. Please make a note of the scientific benefit of these changes in both the *REMARKS* and *COMMENTS* fields as these observations are already nominally scheduled.
    - Changes to the ACIS setup including:
        - Exposure mode
        - Telemetry format
        - Which chips are on
        - What sub-array to use
        - The energy filter
        - The window filter (spatial window) - but this is an expert field
    - Please be advised that the following changes in your observing program are not generally permitted:
        - Adding any new constraints
        - Changing exposure time or target
        - Adding or removing a grating



        - Switching between ACIS (including I to S) and HRC or LETG and HETG so that the target and instrument configuration end up being the same as in someone else's observing proposal.
    - Getting help:
      User self-service information is being organized at at new web site. You will find at this page:
        - A copy of this letter.
        - Very detailed help for the Observation change request page.
        - A link to the Proposer's Observatory Guide.
        - A link to Help Desk . - please use this to suggest improvement to this page and procedures as well as asking for help
        - A Target Search Page.

          Plus some supporting tools including:
        - An ACIS sub-array visualizer.
        - The Web Interface to ObsVis.
        - A picture of The ACIS Focal plane.
        - Generic user letters.

2. The Procedure:

1. Check your OCAT settings at the link provided below:

LINKSOF

Here are some screen shots to guide you:

- The link above will take you to a login page.
    - Your username, is printed here: USERNAMELIKE
    - Your password, if needed, was sent in the contact mail.
- After you give your password you will see the editing page.
- To submit changes, approvals or to reset everything go to the bottom of the page.
- You will then be asked to finalize your request. Notice that your changes are highlighted in red.
- Errors are also highlighted in case you have to go back and fix something.

2. If you approve of the configuration...

1. Select "USER approves this ObsID as is" at the bottom of the change form and click on the "submit button"
2. You still need to "finalize" your approval on the next page.

You're done! You will receive an automated confirmation.

3. If you are not satisfied with the selected parameters...

1. You may change the boxed parameters and write in the comment/remark boxes.
2. Edit these parameters as you wish. (Be careful, you can destroy an observation by moving in the wrong direction). If you need to edit a restricted parameter, email Help Desk. When submitting a ticket please select the category "Obscat Changes" and check the "private" flag. expect about 48 hour turn around during the week.
3. Select "Normal Change" at the bottom and click on the "submit button"
4. All changes will be automatically verified for appropriateness, if there is an error you will be asked to try again.
    - If the change is legal, you will be asked to "finalize" the change.

- If the change is not legal, the range of legal possibilities will be provided, please select "return to previous page" and try again.
- If the computer says that the change you have requested is not legal and you believe that this is in error, please contact Help Desk. When submitting a ticket please select the category "Obscat Changes" and check the "private" flag. *Please don't get too frustrated if the program falsely accuses you of making an error. GTOs and CXC staff are viewed as beta testers for this system. Simply contact the help desk and we will do our best to fix things and contact you within a day.*

5. INTERLUDE....The above process generates a formated email to the Archive group. A staff member will manually make the changes. You may be contacted if they believe a change was requested in error. A computer generated email will be sent to you asking you to proceed with approving the observation once the changes are complete. Expect about 48 hour turn around during the week.

4. If you have become unhappy with a configuration you previously approved.

1. Select "ObsID no longer ready to go" at the bottom of the page and click on the "submit button".
2. "Finalize" this request.
3. Go back to the top of this procedure.

Note: All change requests and approvals are archived in the USINT archive, so there is a permanent record of all transactions. If you need to verify any activity contact Help Desk they can search the archive. When submitting a ticket please select the category "Obscat Changes".

3. Checklist Items

When verifying your observation, please check the following:

- The target coordinates [RA and Dec] (in decimal degrees or sexagesimal). Especially consider the roll at which the target will be observed. Will the target fall in a chip gap?
- The target offset [Offset Y, Z] (in arcminutes)
- The translational position of the detector [Z-SIM] (in mm).
- The Focus [SIM-Focus] (in mm).
- The focal plane position: do the chips match the aimpoint? Check SIM-Focus if using HRC-S/No Grating.
- Have your proposed constraints been met?
- Is the ACIS mode (CC/TE) correct?

Additional Information

A full listing of the meaning of all parameters is given in RPS help .
Below are links to the detailed information letters sent to General Observers.

A. ACIS - Imaging
B. HRC - Imaging
C. HETG
D. LETG

updated: : Wednesday October 2 2003