

# Redesign the User eXperience (RedUX)



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**[Purpose] Learn from the users about the quality of the services, collect the feedback, and then improve our service.**

✓ Interviewed between Nov. 2020 and May 2021

✓ 69 interviewees (26 in EA) carried out

Span all levels of interferometry expertise and career stage as well as scientific profile and interests.

✓ The outcome will be public as Messenger Article on the middle of March .

<https://www.eso.org/sci/publications/messenger/>

✓ Here, I focus on the topics concerning to EA ARC service.

*Demographic Breakdown of RedUX Interview Participants*

Category	N	% of Total
Participants	69	100
<b>Region</b>		
East Asia	26	38
Europe	27	39
North America	16	23
<b>Interferometry Expertise</b>		
Beginner	11	16
Intermediate	30	43
Expert	28	41
<b>Career Stage</b>		
Student	11	16
Postdoc	29	42
Junior faculty/staff	17	25
Senior faculty/staff	12	17
<b>Scientific Profile<sup>†</sup></b>		
Theory	13	19
Observation	65	94
– Radio	51	74
– Optical	15	22
– UV	1	1
– Infrared	21	30
– X-rays	1	1
<b>Primary ALMA Data Usage</b>		
Archival data	15	22
Data as PI or Co-I	48	70
Archival and PI/Co-I data	1	1
Have not used ALMA yet	5	7
<b>ALMA Data Reduction Experience<sup>†</sup></b>		
None	7	10
Have reduced ALMA data	55	80
Reduced other interferometric data	35	51
Reduced other (single-dish, IR, optical) data	40	58

<sup>†</sup> Multiple responses were permitted, numbers may sum to larger than the total.

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## FEEDBACK 1

The navigation to the Japanese EA ARC web page is not optimal, although the web page is useful.

The link to the Japanese EA ARC web page is now emphasized on the NAOJ/ALMA web page.



<https://researchers.alma-telescope.jp/j/>

Started the mailing list for Japanese ALMA users (**alma-user-j**) to share the information.

[**alma-user-j**] ALMA status update in October 2021 and information for Pls

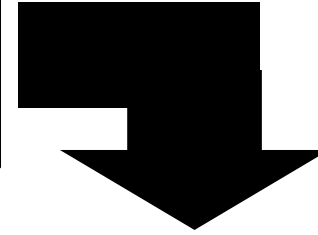
FM **alma-user-j**-request@ml.nao.ac.jp が FUKAGAWA Misato の代 2021/10/19 (火) 9:48  
宛先: alma-user-j@ml.nao.ac.jp  
ALMAユーザーの皆様  
(English follows Japanese.)  
観測所および東アジア地域センター(EA ARC)からの科学運用に関するお知らせです。  
10月1日にCycle 8がスタートし、悪天候等の影響を受けつつも、観測が徐々に進んでいます。今回は特に観測の実行に関する情報をお送りします。

<https://www2.nao.ac.jp/~eaarc/DATARED/index.html>

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## FEEDBACK 2

Users are sometimes hesitate to ask for (virtual) f2f services as they are not aware of the exact type of services that can be requested.



To address this issue, the EA ARC web pages now list the examples of the services.

**Virtual Face-to-Face Support for Data Reduction**

EA ARC does not provide the face-to-face (F2F) support service now due to the COVID-19 impact. Instead, we can provide the support through a video meeting system such as Zoom. The service is provided for reduction/analysis of both PI and archival data. Please contact the Helpdesk for details on how to receive the support, required analysis environment etc.

Please check if the (virtual) F2F service is good for you before applying. Here are example cases for the F2F support.

- There are no researchers who are familiar with ALMA data in the research group including the applicant. The scientific purpose is clear. The data to be reduced/analyzed already exist.
- The applicant needs to handle complex data with no previous experience of such reduction. Communication with EA ARC through Helpdesk is expected to be very inefficient.
- The data reduction/analysis already failed (including the situation where the required level of the result is not obtained or it is difficult to make a decision on the reliability of the reduction/analysis). Consulting the ARC via Helpdesk is expected to be very inefficient.

Please note that depending on the application content, the support may not be virtual F2F, but normal Helpdesk support.

For example,

- Data are analyzed without serious problem but the user has questions for a part of data or reduction.  
⇒ Iterations in the Helpdesk can be sufficient. Please submit a Helpdesk ticket to "Data Reduction (EA)" department.
- scriptForPI.py does not run.  
⇒ In most cases, data downloading failed. Please try the download again. Please ask Helpdesk if you failed multiple times.
- The user does not have the environment for the old version of CASA while it is necessary for running scriptForPI.py.  
⇒ We can deliver the calibrated MS if conditions are met. Please ask Helpdesk.

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## FEEDBACK 3

Video of the ALMA data reduction tutorials, example code, lecture-based school are requested.

The video of the data reduction tutorial will be provided from the next time (2022 Spring).

The EA ARC started to provide jupyter notebooks showcasing data analysis for specific science cases.

Triggered the organization of the summer school hold on this summer.

EA ARC

トップページ

データ解析講習会

論文出版サポート

解析サポート

観測プロポザル

FAQ

リンク集

CASAの使い方(旧ページ)

ALMA入門

Maps To Science

### MAPS TO SCIENCE

イメージデータをもとにサイエンスを行うための例として、研究分野ごとに幾つかの典型的な解析方法を紹介します。

- Maps to Science
  - 1. 原始惑星系円盤・原始星
    - 1. 原始惑星系円盤からラスト円盤の物理量を算出
    - 2. 線観測キューブイメージからガス円盤の回転を知る
  - 2. 星形成領域
    - i. (準備中)
  - 3. 銀河
    - i. (準備中)
  - 4. 活動銀河核
    - i. (準備中)

ここで紹介する解析はイメージFITSが既に作成されていることを想定しています。

Last Update: 2021.01.29

### PVマップ作成

イメージキューブデータは、空間方向XYの2成分と周波数(速度)成分の3次元の情報を含みます。通常、`viewer`等を使ってキューブデータを表示させると空間方向2成分が表示されます。一方、任意の空間方向と周波数(速度)方向の強度分布を、位置速度図 (PVマップ; Position-Velocity map) と言います。円盤の中心を基準に長軸・短軸の方向にカットしたPVマップから、ガス円盤のダイナミクスがわかります。

PVマップは、`viewer`を使って以下の様に簡単に作成できます。キューブデータを表示した後、「PVツール」(アイコ)をクリックし、PVマップを作成したい方向に発点から終点までマウスをドラッグして下さい。右下の「Region」に「pV」タブが開きますので、「Generate PV」をクリックすると、新しいウィンドウが開きPVマップが表示されます。また、このpVタブで、PVマップを作るためのパラメータを任意に指定することも出来ます。averaging widthは、スライスする方向と垂直な方向へ平均する幅をピクセル単位で表します。この値を大きくすると、PVマップのSNが良くなるはずですが、

ます、長軸方向にスライスしたPVマップを作成します。右の図では、背景はカラーのキューブイメージと、コントアでモーメント0マップを表示しています。

新しいウィンドウが開き、作成されたPVマップが表示されます。なお、周波数(速度)方向にはキューブの全範囲が指定されて作成されます。

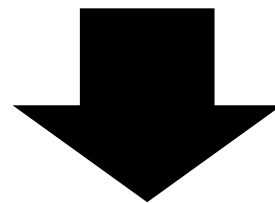
```
# In CASA
imname = 'HL_Tau.H2CO.cube.pbcor'
pvname1 = 'HL_Tau.H2CO.cube.pv01'
pvname2 = 'HL_Tau.H2CO.cube.pv02'
ctx=402 ; cty=391 # center pixs
pvpa = 134.60 # PA (deg)
pleng = 7.0 # arcsec
vlag = '160~310' # vel.ch.range [ch]
# pv maps
os.system('rm -rf '+pvname1+'*')
impv(imagename = imname, outfile = pvname1,
     mode = 'length', center = [ctx, cty],
     length = str(pleng)+'arcsec', pa = str(pvpa)+'deg',
     width = 5, chans = vlag)
os.system('rm -rf '+pvname2+'*')
impv(imagename = imname, outfile = pvname2,
     mode = 'length', center = [ctx, cty],
     length = str(pleng)+'arcsec', pa = str(pvpa+90.)+'deg',
     width = 5, chans = vlag)
# fits
exportfits(imagename=pvname1, fitsimage=pvname1+'.fits',
           velocity=True, dropstokes=True, overwrite=True)
```

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## FEEDBACK 4

Some users faced difficulties in putting forward questions via the ALMA Helpdesk as the wording of their requests is not always straight-forward. Communication with online chat tools such as Slack have the potential to lower the hurdle.

The screenshot displays the EA ARC website interface. On the left is a navigation menu with items like 'トップページ', 'データ解析講習会', '論文出版サポート', '解析サポート', '観測プロポーザル', 'FAQ', 'リンク集', 'CASA の使い方', 'ALMA 入門', and 'Maps To Science'. The main content area is titled 'ALMA データ解析に関する情報' and includes a message 'このサイトは随時更新中です。' and a paragraph of text. A chat bot window titled 'EA ARC User Support' is overlaid on the page, showing a 'Questions?' header and a list of options: 'キャリアレーション済みデータ配布', '(バーチャル)個別解析サポート', '論文出版サポート', 'scriptForPl.pyのエラー', and 'データ解析講習会'. Below the list is a text input field and a '送信' button. A blue circle highlights the chat bot window, and a yellow border surrounds the entire website screenshot.



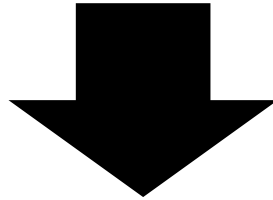
Tentatively, the chat bot is now implemented on the Japanese EA ARC web page.

<https://www2.nao.ac.jp/~eaarc/DATARED/index.html>

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## FEEDBACK 5

Users Meeting was the place where the users can give their feedback to ARC staff directly



Please raise your hand on ZOOM or Unmute your microphone to give us the feedback now!!