



OPEN ACCESS IN ASTRONOMY: WHY SHOULD I CARE?

THE LIBRARIAN'S VIEW





Definition

- Open Access is the **free, immediate, online availability** of research articles coupled with the **rights to use** these articles fully in the digital environment.

Background & Motivation

- OA movement since the 1990s (internet-era)
- Publicly funded research should be available to everybody —> **knowledge exchange**
- Reduce expenditure for journal subscriptions —> **cost transparency**

Effects

- Lots of trying, encouraging, advocating among researchers, organisations, funders, librarians
- Astronomy / HEP: **arXiv / astro-ph** (founded by Paul Ginsparg in 1991)
- Publishers: from **“readers pay”** (subscriptions) to **“authors pay”** (article fees) business model
- “Predatory” journals: lack of quality control

SOME TERMINOLOGY



Subscription-based

Delayed / temporary OA (if at all)
Usage rights governed by publisher



Immediate, permanent access for all

Free to read, use, copy, index, distribute, text-mine with proper attribution

Most common licenses:

Creative Commons Attribution (CC BY)

Gold OA: Article Processing Charges (APCs)

Diamond (Platinum) OA: no direct costs to readers or authors



Green OA: author self-archiving (e.g., arXiv)

Often only “free to read”, not version of record



Hybrid Journals:

Subscriptions + **APCs** for articles: “double-dipping”

Business model being phased out

Image credit: Pixabay.com

ADVANTAGES OF OA PUBLISHING



CC-BY Danny Kingsley & Sarah Brown

Diagram taken from <https://swafs.se/in-english/open-access/>



Aim

- Announced Sept. 2018 by Robert-Jan Smits (OA Envoy of the European Commission)
- Plan **S** = solution, shock, shift....
- Mandatory OA: *“Making full and immediate Open Access a reality”*

Strategy:

- align research funders (c**OA**lition S); initiators: 15 national funding org., EC, ERC
- 10 Plan S Principles, e.g., Authors retain copyright, Quality of OA, No hybrid journals
- effective 2021 (originally 2020)

Desired effects

- shift towards new models in academic publishing
- transparent, efficient, and fair system

Real effects (so far, more to come...)

- increased discussion about OA (if not disruption of publishing landscape)
- publishers’ temporary solutions to be “Plans S compliant” (transformative agreements)

PLAN S JOURNAL CHECKER TOOL

- currently BETA version: <http://journalcheckertool.org>

Is this compliant with Plan S ?

JOURNAL MY FUNDER MY INSTITUTION

Astronomy and Astrophysics (ED) + European Commission(Horizon I) + European Southern Observal =

No affiliation

Yes, this combination is compliant.

Compliant Routes

Self-archiving

You are able to comply with Plan S via Self-archiving.

The following checks were carried out to determine whether the right exists to comply with Plan S via self-archiving. Data from Open Access Button Permissions (OAB Permissions) is used to see if the publisher's policy of self-archiving enables compliance. If it does not or if an unknown answer has been returned then data on cOAlition S Implementation Roadmap data is checked to see if cOAlition S's Rights Retention Strategy provides a route to compliance :

- Check Open Access Button Permissions for journal
 - The journal is found by OAB Permissions
- Check if OAB Permissions says the journal allows archiving
 - OAB Permissions confirms the journal allows archiving
- Check if postprint or publisher PDF can be archived
 - Postprint can be archived
- Check there is no embargo period
 - There is no embargo period
- Check there is a suitable licence

What options do I have?

SELF-ARCHIVING USING RIGHTS RETENTION

You have the right to self-archive the author accepted manuscript should you choose. More information on how available [here](#).

PUBLICATION BUSINESS MODELS

Status	Model	Who pays?	How much?	Who can read?	Who can publish?	Plan S compliant?	Costs? (*)
Closed	Subscription (incl. hybrid journals)	Libraries	Too much	Scientists at subscribing institutions	Everyone	No	
	Commercial and society publishers	Authors	Depends on publisher	Everyone	Paying authors	Yes	
Gold OA (APCs)	Overlay journals e.g., <i>The Open Journal of Astrophysics</i>	Authors	Very little	Everyone	Paying authors	Yes	
	Read-and-Publish (RAP) agreement	Libraries, Funding organisations	Based on previous subscriptions	Everyone	Authors from funding organisations	3 years	
Transformative Agreements (max. 3 yrs.)	Publish-and-Read (PAR) agreement	Libraries, Funding organisations	Calculated on estimated publishing volume	Everyone	Authors from funding organisations	3 years	
	Subscribe to Open (S2O) e.g., <i>Annual Reviews</i>	Libraries, Funding organisations	Based on previous subscriptions	Everyone	Everyone	Yes	
Diamond OA (Library support)	SCOAP3 (CERN-led HEP consortium)	Libraries, Sponsoring HEP organisations	Negotiations with publishers	Everyone	Everyone	Yes	

* The estimated cost evolution reflects the personal opinion of the author.

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Impact

- Costs shifting from journal-level to article-level

Research assessment / evaluation

- Urgently needed: **evaluation** shifting to **article-level metrics**
- No more *Journal Impact Factor* to judge individual researchers' output
- Active **support of open science activities** (publishing in / reviewing for quality OA journals)
- Evaluation process should be transparent, reproducible, robust, and diverse
(see DORA - Declaration of Research Assessment, <https://sfdora.org> → *upcoming Duologue*)
- Paradigm shift needed

Should we rely exclusively on eprints?

- How about peer-review / quality control?
- Publishing / posting volume so high that we need pre-selection by editors?

RECAP: OA IN ASTRONOMY

- ✓ **Core journals:** governed by Learned Societies (AAS, RAS, ESO)
- ✓ **Read access:** 90+% of current core journal articles via astro-ph and temporary access
- ✓ **Collaborative approach:** data sharing, code sharing, etc.

Why further OA regulations? (And why we should care)

- ▶ **Open Access is here to stay;** “free to read” is not Open Access
- ▶ Implement **FAIR** (Findable / Accessible / Interoperable / Reusable) principles
- ▶ **Funders** increasingly demand research from their grants to be OA
- ▶ **OA is good science practice**, astronomy is not (should not be) outside of “industry standards”

How to achieve OA? Some thoughts from key players:



Publishers: flip to OA must be long-lasting ([sustainable](#)) with reliable partners



Readers: prefer access to as many articles as possible ([multi-disciplinary research](#))



Authors: want the move to OA to be seamless and [non-disruptive](#) (“Diamond OA”)



Libraries: [cannot afford](#) rising subscription (or APC) costs; support [collaborative OA](#)