



# A Librarian's View on Open Access Models

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# Background Info Astronomy

# Work Culture in Astronomy

*Traditionally.....*



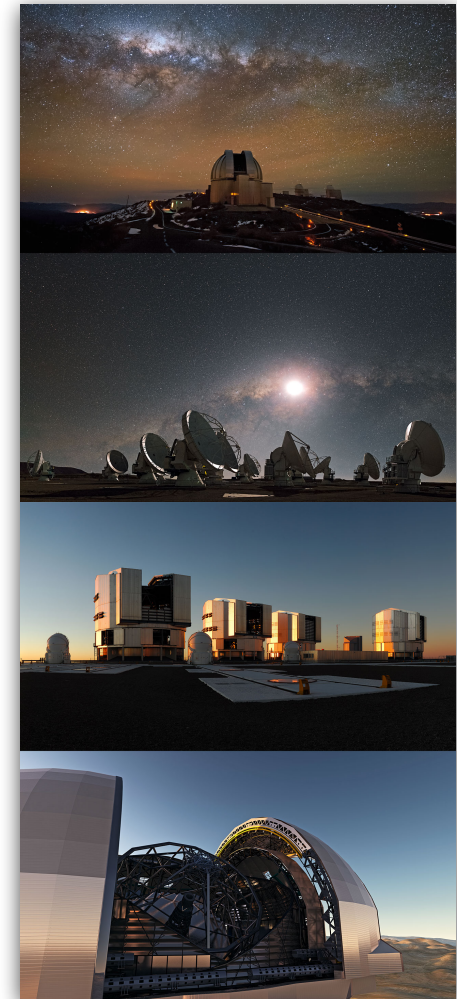
Observatories typically in **remote places**



Community (researchers and librarians) **closely connected**



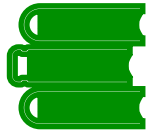
Tradition of **sharing and exchange** (of papers, data, code...)



# Read-Access in Astronomy



Wide-spread use of **Green OA** (arXiv/astro-ph eprint server)  
(typically without CC-BY license, so not full Open Access)



Core journals digitised and **freely available back to vol. 1**



Publishers provided (pre-OA) **temporary access** to selected recent articles



Free access to core journal content often **one year after publication**

# Core Journals in Astronomy



## Four “essential” journals

- > 35% of refereed astronomy literature
- ESO 1st-author refereed papers: 90+% in core journals



## Governed by **Learned Societies**, publ. by commercial publishers

- American Astronomical Society (AAS) / IOP Publishing: **ApJ/AJ**
- Royal Astronomical Society (RAS) / Oxford University Press: **MNRAS**
- Community of Member Countries’ astronomers / EDP Sciences: **A&A**



## Community or researchers

- strongly influences publishing developments, but
- many astronomers don’t see need for OA beyond status-quo
- need OA solutions with **minimal researcher burden** (especially in Europe)





# Open Access Business Models

# Publication Business Models

<https://doi.org/10.18727/docs/10>

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	
	Subscription + Self-Archiving using Rights Retention (e.g., AAAS Science Magazine)	Libraries	Too much	Everyone (Author Accepted Manuscript, AAM)	Everyone	Yes	 Costs of journal subscription
Gold OA (APCs)	Commercial and society publishers	Authors	Depends on publisher	Everyone	Paying authors	Yes	
	Overlay journals e.g., <i>The Open Journal of Astrophysics</i>	Authors	Very little	Everyone	Paying authors	Yes	
Transformative Agreements (max. 3 yrs.)	Read-and-Publish (RAP) agreement	Libraries, Funding organisations	Based on previous subscriptions	Everyone	Authors from funding organisations	3 years	
	Publish-and-Read (PAR) agreement	Libraries, Funding organisations	Calculated on estimated publishing volume	Everyone	Authors from funding organisations	3 years	
Diamond OA (Library support)	Subscribe to Open (S2O) e.g., <i>Annual Reviews</i>	Libraries, Funding organisations	Based on previous subscriptions	Everyone	Everyone	Yes	
	SCOAP3 (CERN-led HEP consortium)	Libraries, Sponsoring HEP organisations	Negotiations with publishers	Everyone	Everyone	Yes	

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 April 2021

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

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Closed	Subscription (incl. hybrid journals)	Libraries	Too much	Scientists at subscribing institutions	Everyone	No	
Closed + Rights Retention	<b>Closed + Rights Retention</b>				Everyone	Yes	 Costs of journal subscription
Gold OA (APCs)	<b>APCs</b>				Paying authors	Yes	
	<b>Overlay journals</b>				Paying authors	Yes	
Transformative Agreements (max. 3 yrs.)	<b>Transformative Agreements</b>				Authors from funding organisations	3 years	
					Authors from funding organisations	3 years	
Diamond OA (Library support)	<b>Collaborative Model: Subscribe to Open (S2O)</b>				Everyone	Yes	
					Everyone	Yes	

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# APCs (Article Processing Charges)

## Concept overview

- APC-based (“Gold”) OA currently the dominant model, applied by many publishers
- APCs charged to authors for publishing
- From “*readers pay*” (subscriptions) to “*authors pay*” (publishing fees)
- No subscriptions (otherwise: “hybrid journals” —> double-dipping!)
- Unintended side-effects:
  - Rise of “predatory publishers” w/o quality control
  - Bad reputation of OA

## Costs

- Depend on journal (up to ~EUR 10,000 per article)
- Typically vastly increased costs for research performing organisations (many papers!)

## Librarian’s View

- **Access barrier** shifted from reading to publishing
  - APC-based OA **not equitable**
  - APC waivers: well-intended, but still **patronising**
- **Disruptive for authors** who are not used to payments
- Planning a publishing budget has become difficult (impossible?)
- Requires **new institutional infrastructure**:
  - budget for publication costs (where? Admin? Library? ....?)
  - **policies** how to spend (*first come, first serve??*)

# Overlay Journals

## Concept overview

- APC-based OA, but low or no publishing costs
- Existing eprint infrastructure (e.g., arXiv) plus refereeing system
- Initiatives run by volunteers (researchers), based on grants (e.g., from foundations)
- Example:

*The Open Journal of  
Astrophysics*

(<https://astro.theoj.org>)



## Costs

- Low, if any (few or no in-house services, e.g., copy-editing)

## Librarian's View

- Long-term **sustainability?**
- Danger of **losing publishers' expertise**
- Unknown titles **lack recognition**
- Requires **shift in research evaluation** towards Open Science

# Read-and-Publish (RAP) Agreements

## Concept overview

- High-level agreements between research organisations / countries + publishers
- Often still called Transformative Agreements
- Typically provide access to publisher's open and closed content + (some) OA publishing
- Examples: Springer-Nature, Elsevier



## Costs

- Complex cost calculation: Subscription + #papers (APCs)
- Number of OA articles typically capped! High costs for additional papers (e.g., *Nature* EUR 9,500)
- Often **higher costs** than before (!)

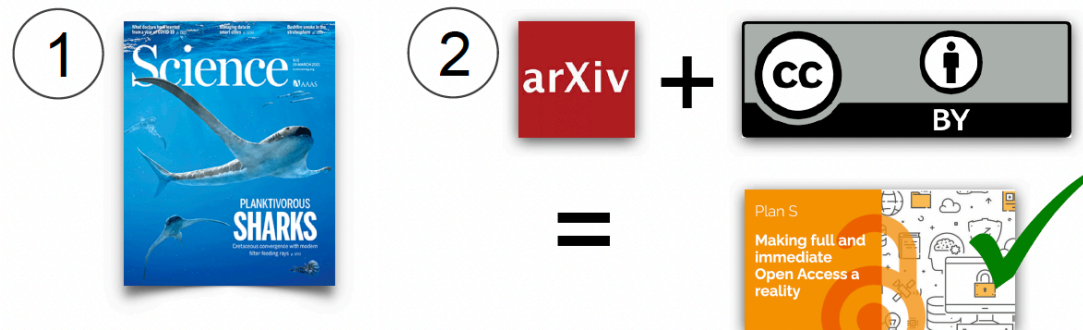
## Librarian's View

- New **dependancy** on for-profit publishers (“Big Deal”)
- RAP Agreements “cement” **APC-based** OA model
- How about small, specialised libraries without need for access to entire publisher portfolio?
- Minimum requirements:
  - transparent and reasonable publishing costs
  - unlimited OA publishing
  - consider situation of specialised organisations

# Subscription + Rights Retention

## Concept overview

- Publication in closed (subscription) journal
- Funders' requirement: use of open license (e.g., CC-BY)
- Peer-reviewed manuscripts (Author-Accepted Manuscripts, AAM) with CC-BY sent to repository
- Example: *Science*



## Costs

- As before (subscription)

## Librarian's View

- Very promising alternative
- Results in two parallel versions of papers (Version of Record + AAM)
- Feasible only for journals with extensive content besides research articles?
- Changes the "FAIRness" of manuscripts, not of journals (no changes to traditional publishing)

# Collaborative Model: Subscribe to Open (S2O)

## Concept overview

- Continued library subscriptions to achieve global Open Access
- Participating libraries have previously shown interest in content
- “Free riders” problem: OA achieved only if all subscribers participate
- Examples:
  - Annual Reviews
  - EDP Sciences



## Costs

- As before (subscription)
- Possible discounts (e.g., “Early Bird Renewals”)
- Decreasing fees if additional subscribers participate

## Librarian’s View

- Uses **existing infrastructure** (budget handling), can be **implemented fast**
- Is **predictable** and **equitable**
- Reflects **specific information needs** of specialised research community
- Workflow unchanged, OA achieved —> **high acceptance expected**



# Conclusions

# Outlook and Conclusions

## Varied OA landscape

- Large **mix of models** during coming years
- Authors should know pros and cons of options
- **Librarians play an important role** in helping them decide where to publish

## Open Access is a paradigm shift. We must get it right!

- Already **too many unintended side-effects** (e.g., continued injustice of favouring authors from the Global North)
- **Better OA models** than APCs are available, but need more attention
- Librarians make **strategic choices** when enabling OA
- Let's strive for **collaborative, equitable, transparent, sustainable models**

## OA goal: Reduce / stabilise costs

- Stabilising costs: **main driver of OA** movement!
- Move to OA must be **cost neutral**; already (too) much money in the publishing system
- **Avoid dependancy** on (high-price commercial) publishers (no more Big Deals!)

