



OPEN ACCESS IN ASTRONOMY

EIROforum Open Science Info Exchange

— 25 August 2022 —

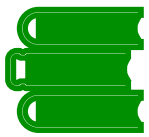
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READ ACCESS IN ASTRONOMY



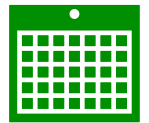
Wide-spread use of **Green OA** (arXiv/astro-ph)



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



Publishers provide **temporary access** to
selected recent articles



Access to core journal content often **one year**
after **publication**

CORE JOURNALS



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



Governed by **Learned Societies**,
published by commercial publishers

- ApJ / AJ — American Astronomical Society (AAS) / IOP Publishing
- MNRAS — Royal Astronomical Society (RAS) / Oxford Univ. Press
- A&A — European Southern Observatory (ESO) / EDP Sciences



Community of researchers strongly influences
publishing developments

CORE JOURNALS: OA

Astrophysical Journal (ApJ), Astronomical Journal (AJ)

- **Gold (APC-based)** model as of 2022
- APCs depend on journal and article length (approx. USD 1,100 - 4,500)

Costs

- Increased costs for authors in comparison with page charges
- Total annual costs difficult to predict

Librarian's View

- **Access barrier shifted** from reading to publishing; **not equitable**
- **Disruptive for authors** who are not used to page charges
- Requires new institutional infrastructure, in particular **budget for publication costs** and **guidelines** how to spend (first come, first serve??)



CORE JOURNALS: OA (CONTD.)

Astronomy & Astrophysics (A&A)

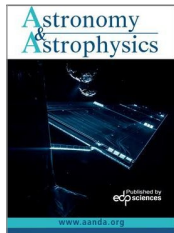
- Mostly **Diamond** (no direct costs to readers or authors) model; slightly modified Subscribe to Open (S2O) as of 2022
 - **Reading:** continue with library subscriptions to achieve global read-access (if ~95% subscription/renewal threshold is met)
 - **Publishing:** A&A Member States contributions to cover publishing costs for MS authors; moderate publishing fee for non-MS authors
- No changes for majority of authors

Costs

- Subscription fee (2023: discount for “Early Bird” renewals)

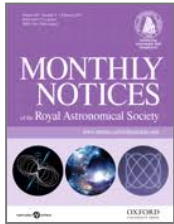
Librarian’s View

- Transparent & predictable; uses **existing infrastructure** (budget handling)
- Reflects **specific information needs** of specialised research community
- Workflow unchanged, but OA achieved —> **high acceptance expected**



Monthly Notices of the Royal Astronomical Society (MNRAS)

- Currently subscription-based + OA option (hybrid journal)
- Growing number of Read and Publish (RAP) agreements
- Full OA tbd



Transformative Agreements

- Agreements between research organisations / countries + publishers
- Publish-and-Read (PAR) / Read-and-Publish (RAP), costs based on subscription price + number of papers per institute
- Typically include access to publisher's open and closed content + OA publishing

Costs

- Often limited number of articles; potentially high costs for additional papers
- TAs for max. 3 years, then what?

Librarian's View

- ESO currently not a member of any TA; opted out of German DEAL consortium
- Complex (intransparent?) calculation to define individual participants' costs
- TAs result in yet another (publisher-driven) dependency (“**Big Deal**”)
- How about **small, specialised libraries** w/o need for entire portfolio?
- PARs / RAPs interesting if they make **publishing costs transparent and long-term predictable at reasonable prices** and **cater to the situation of specialised organisations**

ALTERNATIVE OA MODELS (2)

Overlay Journals

- “Gold OA”, (low) publishing costs
- Existing eprint infrastructure (e.g., arXiv) plus refereeing system
- Initiatives run by volunteers (researchers), based on grants (foundations)
- Example: The Open Journal of Astrophysics (<https://astro.theoj.org/>)

Costs

- Low, if any

Librarian's View

- Long-term **sustainability?**
- Danger of **losing publishers' expertise?**

Repositories / Platforms

- Example: Open Research Europe (ORE, <https://open-research-europe.ec.europa.eu/>)
- Multi-disciplinary, rapid, transparent publishing
- Full support of FAIR principles; option to deposit data
- Preprint submission -> open peer review -> refereed publication
- No impact factors, instead e.g., support of DORA Declaration (article-level metrics etc.)
- ORE currently limited to grant holders of Horizon 2020, Horizon Europe, Euratom

Costs

- Low, if any (< EUR 1,000)

Librarian's View

- Very **promising alternative**
- Requires / emphasises / builds on **shift in research evaluation** towards Open Science

Astronomers still not always sure about OA benefits

- Long-standing culture of sharing
- Astronomers often see OA regulations as a burden, we must get their “buy-in”
- ESO: **no OA policy defined yet**

Costs

- **Reducing / stabilising costs** important driver of OA movement; increased costs not acceptable for ESO
- **Avoid dependancy** on (high-price commercial) publishers

Open Science / OA is a paradigm shift. We must get it right!

- Open Access is too important to rush to “solutions” prematurely
- Let’s strive for **collaborative, equitable, transparent, sustainable models**