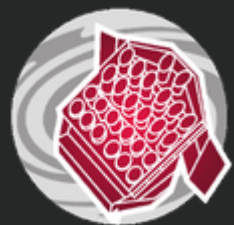




# PIC update process

PIC VERSIONING

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## PIC VERSIONING & NAMING CONVENTION

PIC is a living catalogue:  
frequent updates need a versioning system  
to be tracked by users

## HOW PIC VERSIONING WORKS

a simple way to be aware of the  
severity of changes in the PIC content

# Outline



**N1**

## PIC MAJOR RELEASE

It is linked to the Gaia Release.  
It changes only when:  
- a new Gaia Release is available

**WARNING:**  
PICid CHANGES  
between different  
PIC major releases!

**N2**

## PIC BREAKING CHANGES

It can change when N1 remains the same  
and only if:  
- the number of objects in PIC changes  
- the number of columns in PIC changes  
- the format of a column in PIC changes

When N1 changes, N2 is put again equal to 0.

**N3**

## PIC MINOR CHANGES

It can change when N1 and N2 remain the same.  
It indicates that:  
- the value in one or more fields are updated

When N1 or N2 change, N3 is put again equal to 0.

# Naming Convention

**PIC** **N1** . **N2** . **N3**

**PIC delivered to PDC is  
always named as:**

**PIC N1.N2.N3**

being N1, N2 and N3 integer numbers

Examples:

**PIC1.0.0** (delivered to PDC in May 2019)

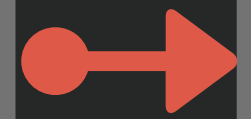
**PIC1.1.0** (to be delivered in December 2019)

**PIC2.0.0** (will be based on GaiaDR3 data)

# DIFFERENCES BETWEEN PIC1.0.0 and PIC1.1.0

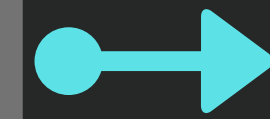
## PIC1.0.0

based on Gaia DR2 data



## PIC1.1.0

based on Gaia DR2 data



N1 remains the same



**NO CHANGES IN PICid.**  
PICid changes **ONLY**  
when N1 changes

# DIFFERENCES BETWEEN PIC1.0.0 and PIC1.1.0

## PIC1.0.0

based on Gaia DR2 data

P1+P2+P5, both nominal fields

## PIC1.1.0

based on Gaia DR2 data

P1+P2+P5+P4, both nominal fields

→ N1 remains the same

→ N2 changes: both # of sources and # of columns are different.  
P4 added.  
New selection methods and improved calibrations.

# DIFFERENCES BETWEEN PIC1.0.0 and PIC1.1.0

## PIC1.0.0

based on Gaia DR2 data

P1+P2+P5, both nominal fields

1st time this major version of PIC is released

content described in  
PLATO-SSDC-PDC-TN-0001  
and PLATO\_SCI\_UPD\_TN\_015

## PIC1.1.0

based on Gaia DR2 data

P1+P2+P5+P4, both nominal fields

N2 changed

content will be described in  
WP34 delivery note and WP13 scientific report  
(both in preparation)

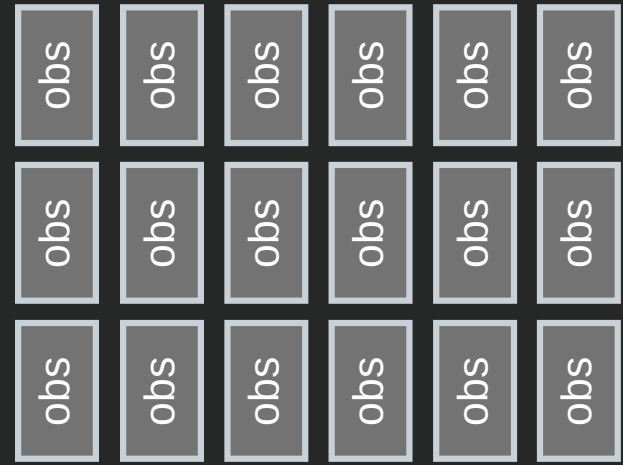


N1 remains the same

N2 changes: both # of sources and # of columns are different

N3 is set to 0

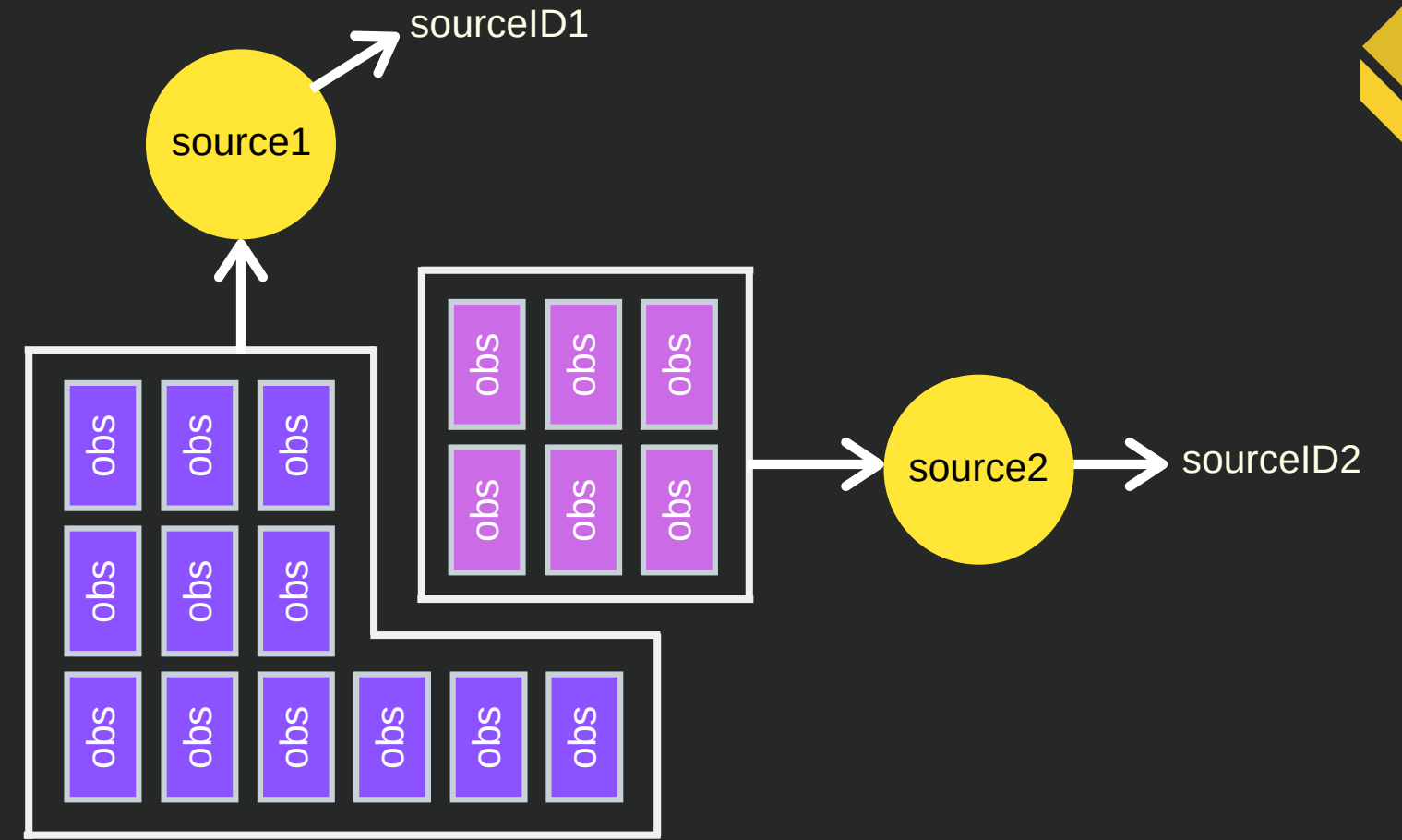
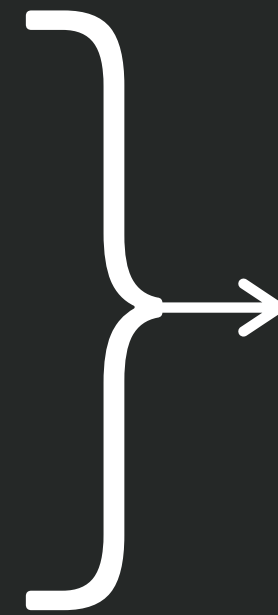
# WHY PICID CHANGES BETWEEN PIC MAJOR RELEASES



process that groups individual Gaia observations and links them to sources on the sky



creation of the source list and their corresponding observations, which forms the basis for the subsequent data processing



After DR1 and before DR2 the algorithm that carries out the grouping of observations and linking to sources has been **much improved**

**many changes in the grouping of observations, resulting in a significant fraction of changes in the sourceIDs at the bright end ( $G < 12$ ) of the source list**

**The source list for different release of Gaia data should be treated as INDEPENDENT**

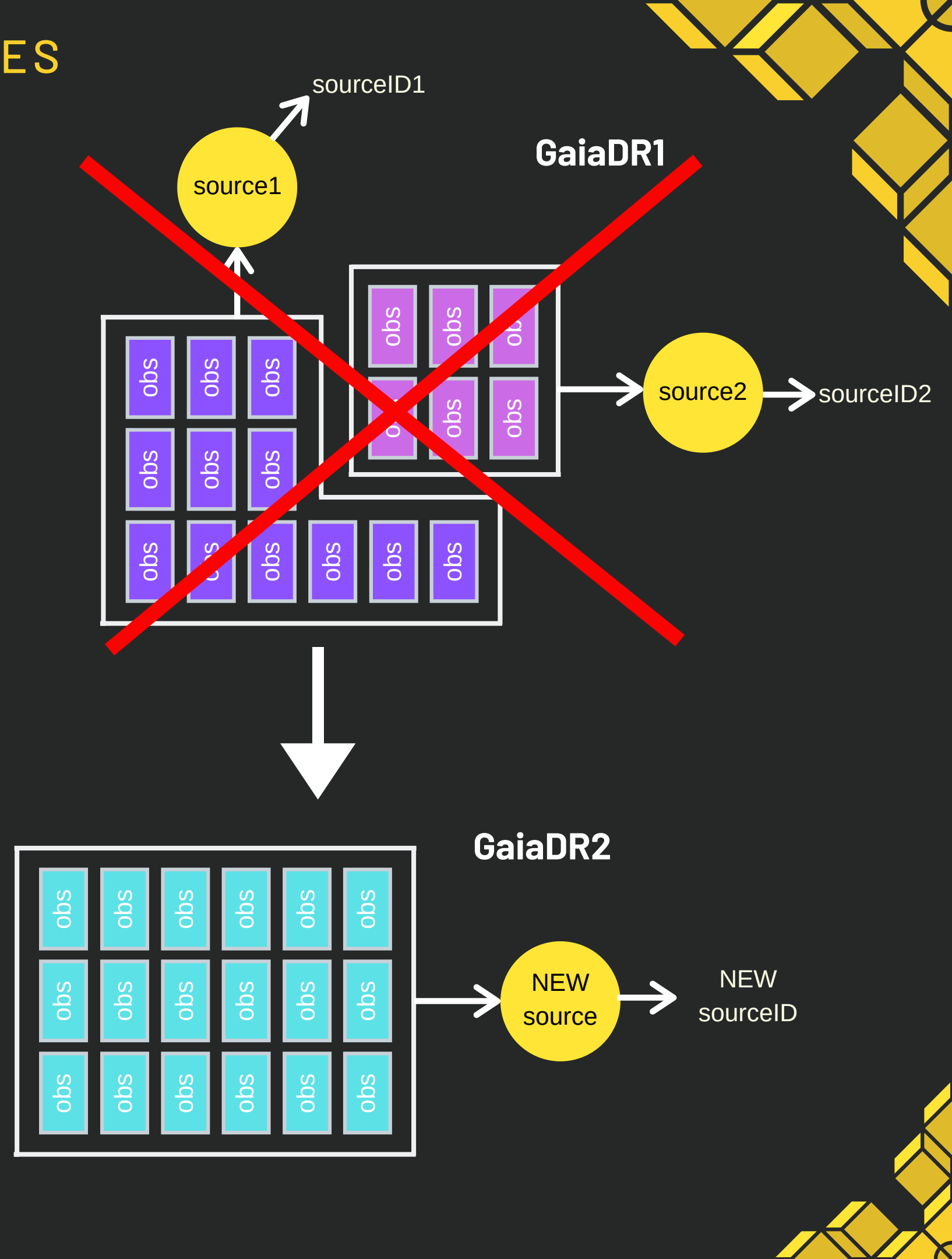
**in future Gaia releases the source list is expected to become progressively more stable**

# WHY PICId CHANGES BETWEEN PIC MAJOR RELEASES

There are various reasons why the identifier of a specific source may change or disappear when going from one Gaia data release to another

## 1 MERGING

The **merging** of groups of observations previously linked to more than one source **will lead to a NEW SOURCE** associated to the merged observations (with a new sourceID) **and the DISAPPEARANCE** of **the original sources** (along with their sourceIDs)



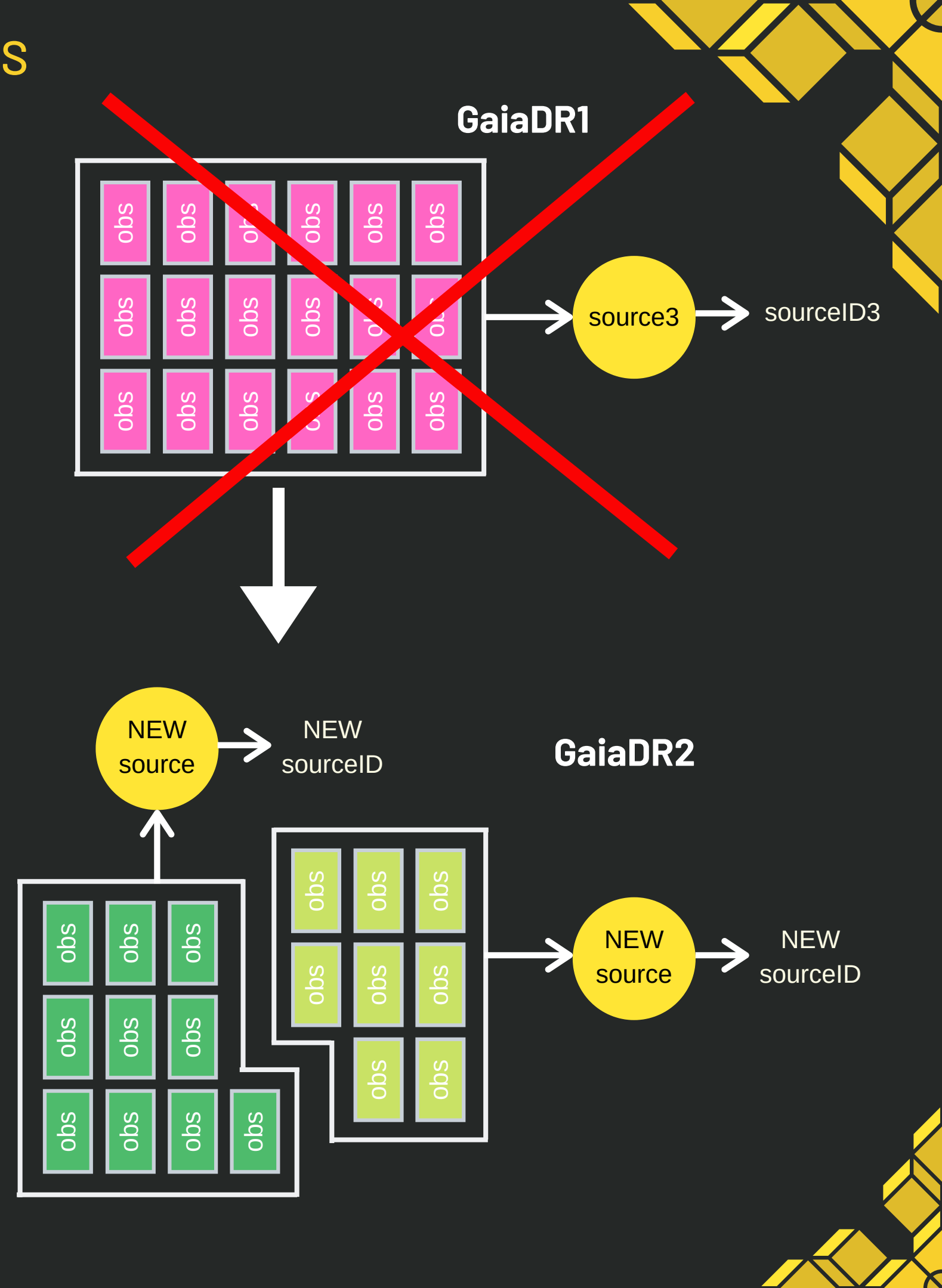


# WHY PICId CHANGES BETWEEN PIC MAJOR RELEASES

There are various reasons why the identifier of a specific source may change or disappear when going from one Gaia data release to another

## 2 SPLITTING

The **splitting** of groups of observations previously linked to one source **will lead to NEW SOURCES** associated to the split groups of observations (with a new sourceIDs) **and the DISAPPEARANCE of the original source** (along with its sourceID)



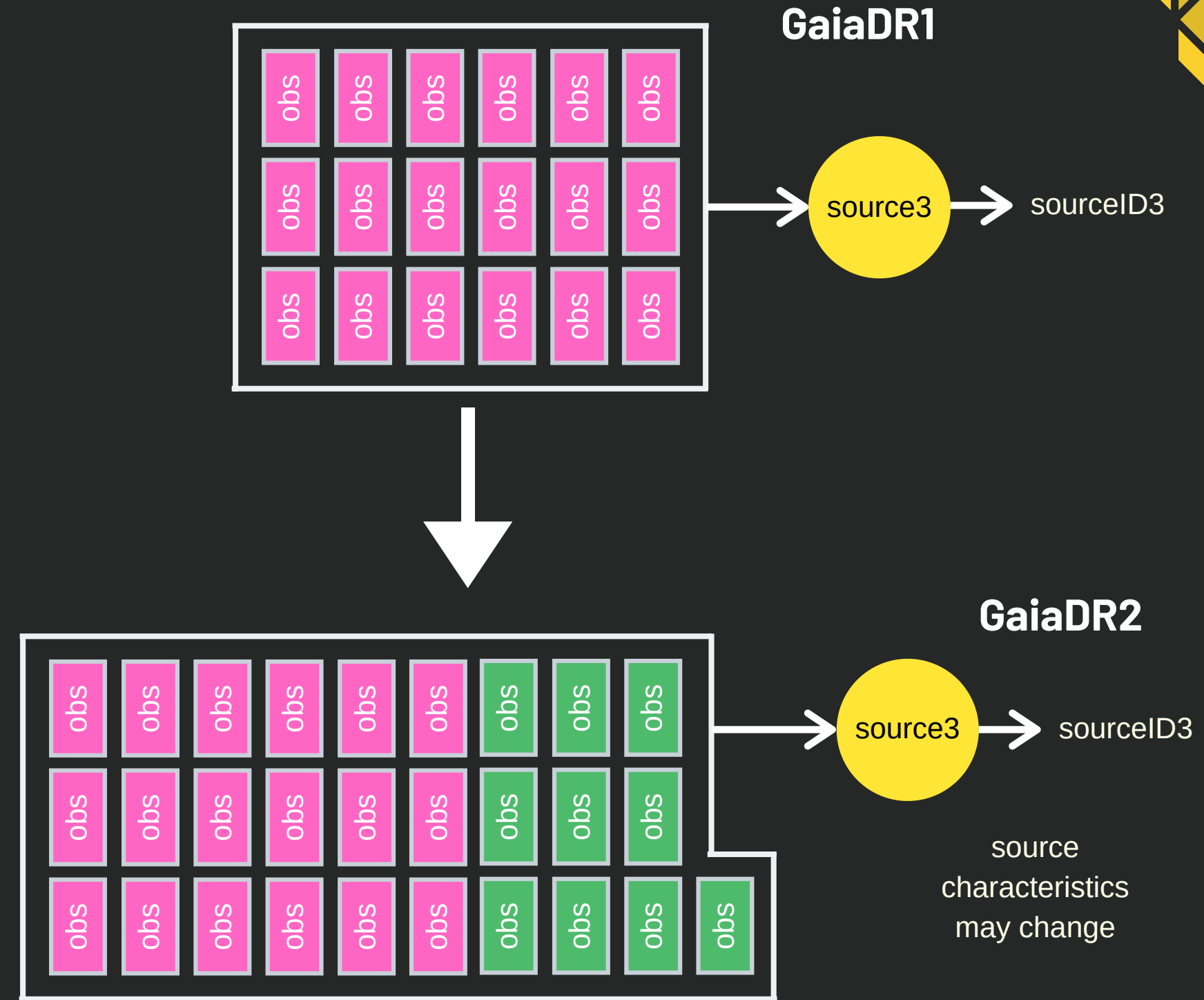
# WHY PICId CHANGES BETWEEN PIC MAJOR RELEASES

There are various reasons why the identifier of a specific source may change or disappear when going from one Gaia data release to another

## 3 CHANGES IN THE LIST OF OBSERVATIONS

(beyond the normal adding of more observation)

The **list of observations** linked to a source **may change** (and hence the source characteristics may change), while the **sourceID** remains the same.



# WHY PICid CHANGES BETWEEN PIC MAJOR RELEASES

Sources in Gaia will change with new releases (beyond normal adding of more observations)



Gaia sourceIDs will change



No possibility to recover a changed source in a previous release  
OR  
no trivial method to do so



PICid will change :

- 1 new sources may appear in PIC
- 2 sources already present in a previous PIC major release may disappear
- 3 the characterization of sources already present in a previous PIC major release may vary

After delivery to SOC we will try our best to recover the delivered PIC targets IDs in newer PIC major releases

In case of preparatory observations the same will apply

# CONCLUSIONS

- ① The PIC versioning system allows users to be immediately aware of which kind of changes occurred between two different PIC releases.
- ② PICid changes between different PIC major releases.  
The track of targets (if possible) will be done only when really needed (surely after delivery to SOC but also in case of preparatory data acquisition).
- ③ When using PIC: please, refer to targets using also the PICname (see talk by Marrese) and not only the PICid.

*Thank you for your attention!*