

Temporal Search Inconsistencies with CMR API

We at the [LP DAAC](#) have been noticing some inconsistencies with regards to interacting with the [CMR API](#) lately.

- First is that the temporal ranges don't seem to do what I would expect based on the documentation.
 - Let's say I want to grab the **AST_L1T v003** granules from **2016-10-10** at **01:38:36Z** to **01:39:03Z**. The query I would expect to make is this:
 - [https://cmr.earthdata.nasa.gov/search/granules.json?pretty=true&short_name=AST_L1T&version=003&temporal\[\]=2016-10-10T01:38:36.000Z,2016-10-10T01:39:03.000Z](https://cmr.earthdata.nasa.gov/search/granules.json?pretty=true&short_name=AST_L1T&version=003&temporal[]=2016-10-10T01:38:36.000Z,2016-10-10T01:39:03.000Z)
 - This returns the following granules:
 - G1334068323-LPDAAC_ECS at time 2016-10-10T01:38:36.000Z
 - G1334312987-LPDAAC_ECS at time 2016-10-10T01:38:45.000Z
 - G1334312859-LPDAAC_ECS at time 2016-10-10T01:38:54.000Z
 - Note that these granules are all from **01:38:xxZ**.
 - Now let's say I bump up my end time on my search by 1 second to **01:39:04Z** using this query:
 - [https://cmr.earthdata.nasa.gov/search/granules.json?pretty=true&short_name=AST_L1T&version=003&temporal\[\]=2016-10-10T01:38:36Z,2016-10-10T01:39:04Z](https://cmr.earthdata.nasa.gov/search/granules.json?pretty=true&short_name=AST_L1T&version=003&temporal[]=2016-10-10T01:38:36Z,2016-10-10T01:39:04Z)
 - Now I get back a fourth granule:
 - G1334068323-LPDAAC_ECS at time 2016-10-10T01:38:36.000Z
 - G1334312987-LPDAAC_ECS at time 2016-10-10T01:38:45.000Z
 - G1334312859-LPDAAC_ECS at time 2016-10-10T01:38:54.000Z
 - G1334312951-LPDAAC_ECS at time 2016-10-10T01:39:03.000Z
 - Note the time on that granule, it matches the exact time that I asked for in the first query.

Based on the [documentation](#), it says "For temporal range search, the default is inclusive on the range boundaries." which to me says that any granules matching the dates I provide should be included in my results. This seems to work fine for the early/left side of the range, as the first granule returned matches my earliest date, but it doesn't work on the later/right side of the range.

Secondly, it doesn't seem like the option to flip the logic so that it excludes the boundary makes a difference on the results. If I add

```
"options[temporal][exclude_boundary]=true"
```

to the end for those queries, the results stay the same. I would expect the first granule to disappear in both cases since my earliest date matches the granules date exactly.