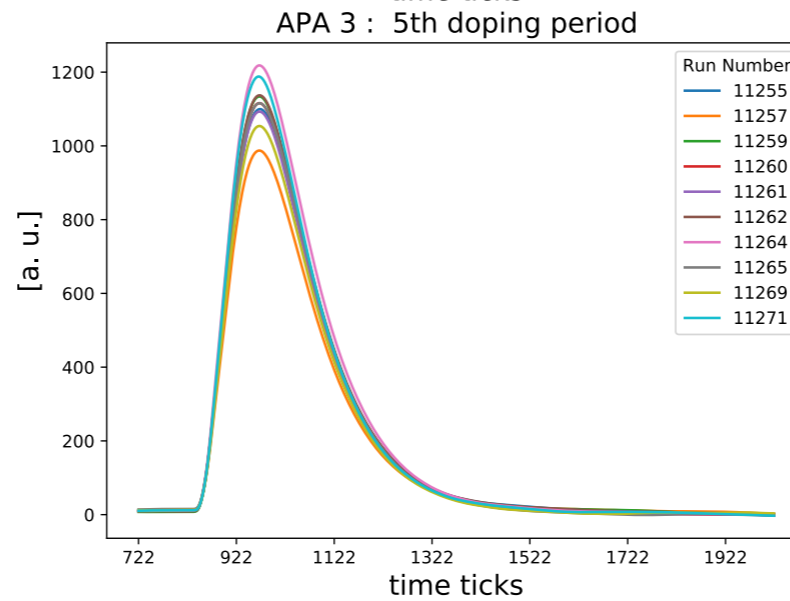
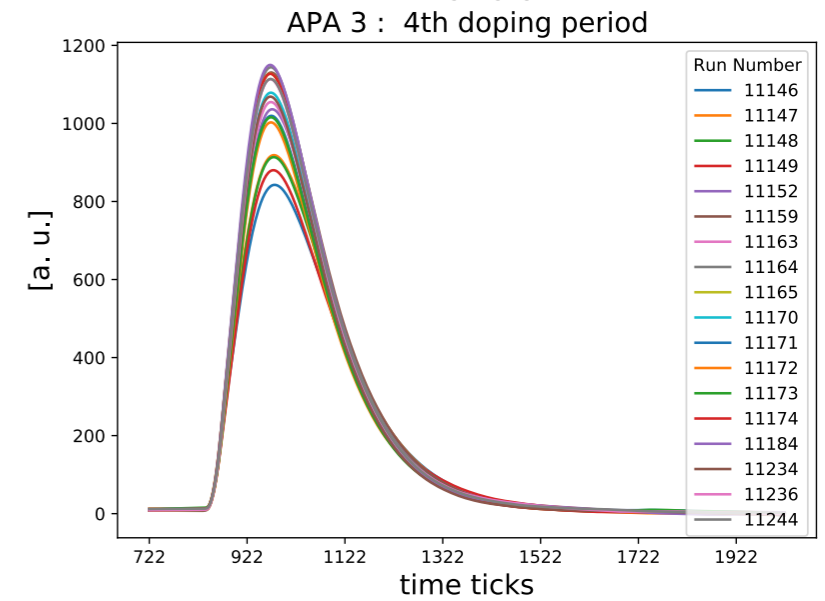
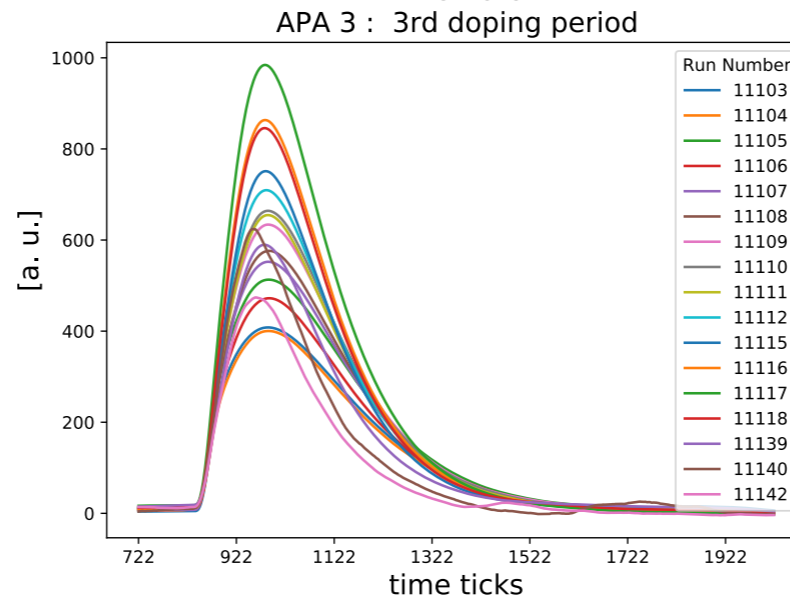
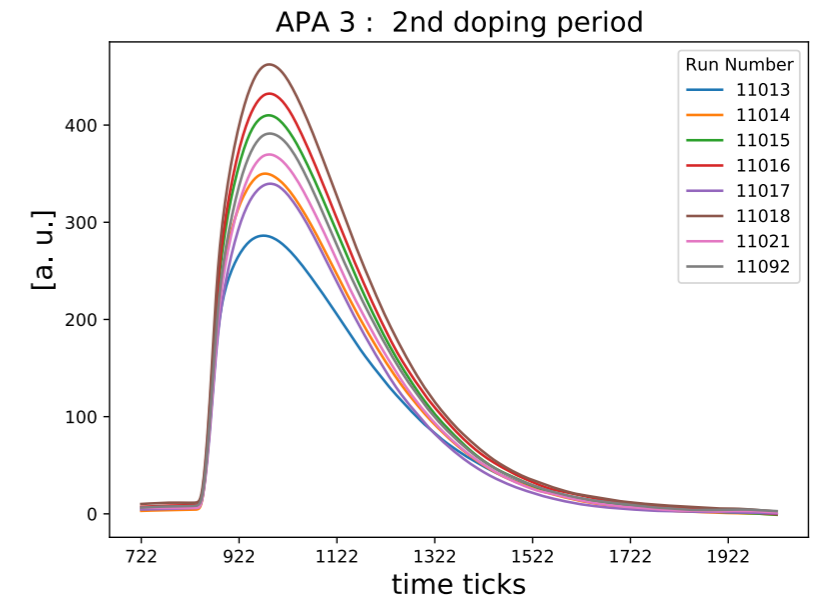
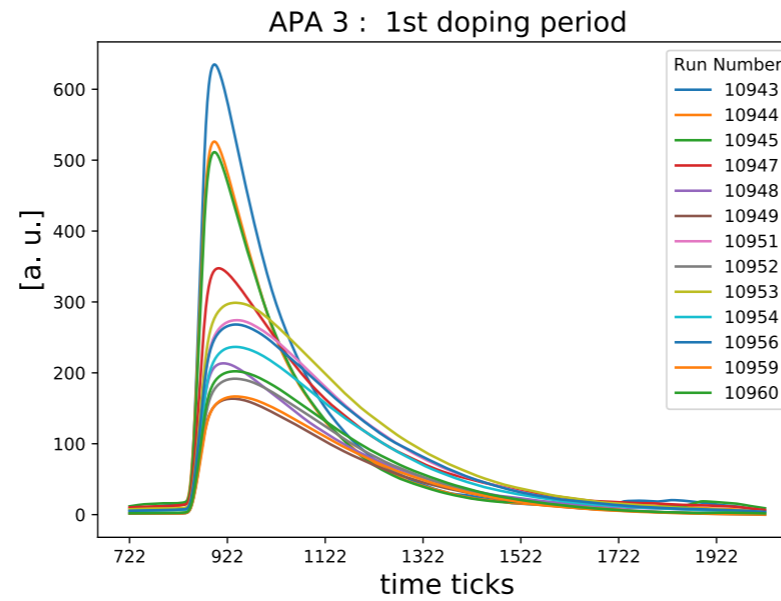

UPDATE ARAPUCA STUDIES

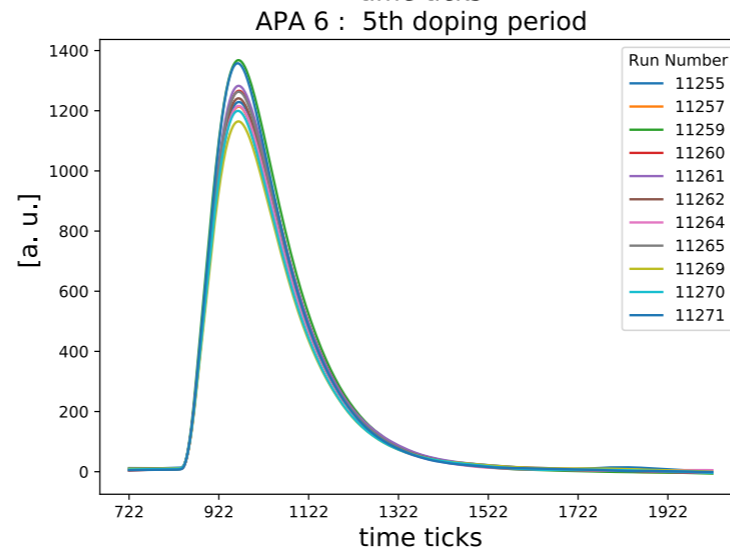
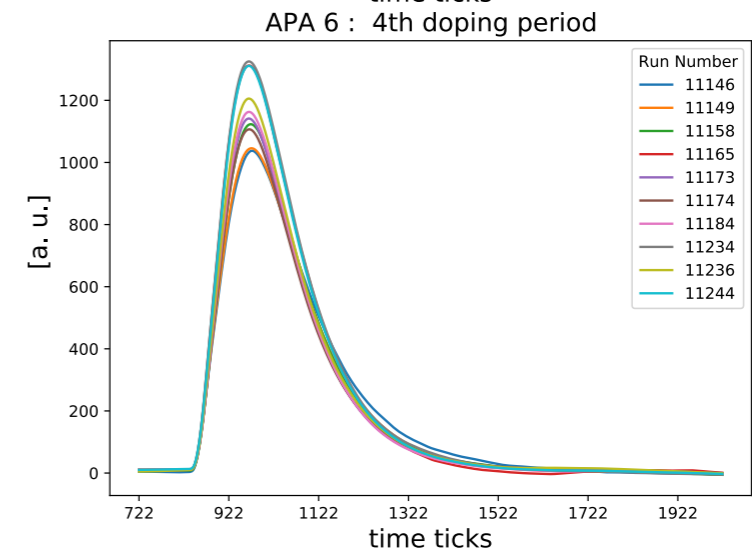
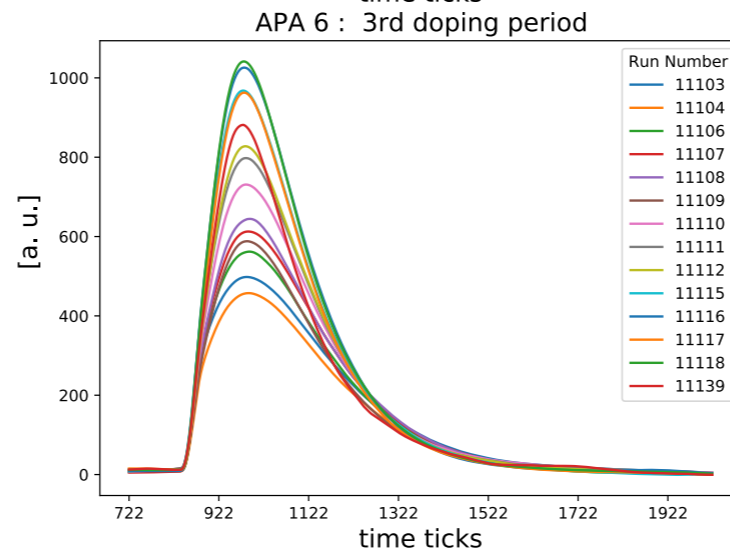
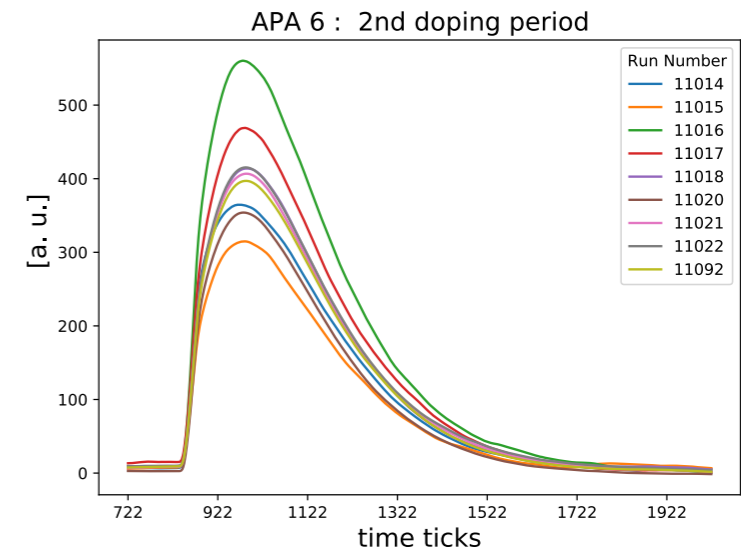
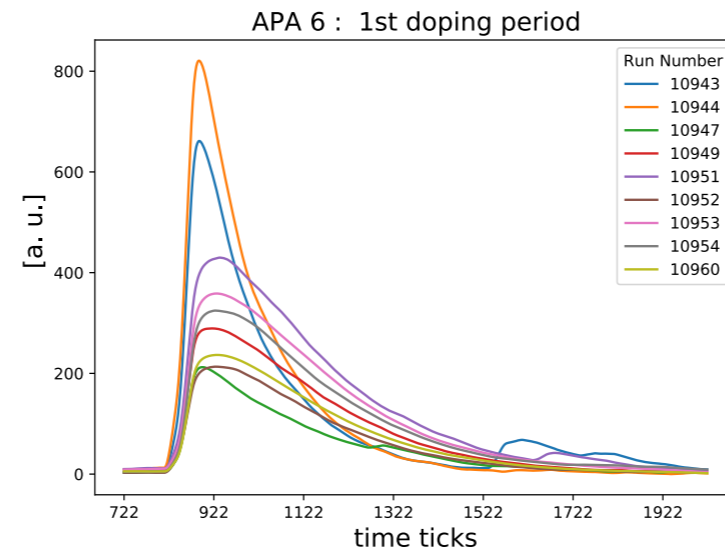
STEFANIA BORDONI

- ▶ Update of plots with new data (up to 20 May)
- ▶ Close look to some run with 'bizzarre' behaviour
- ▶ First attempt to check for Xe diffusion in pDUNE

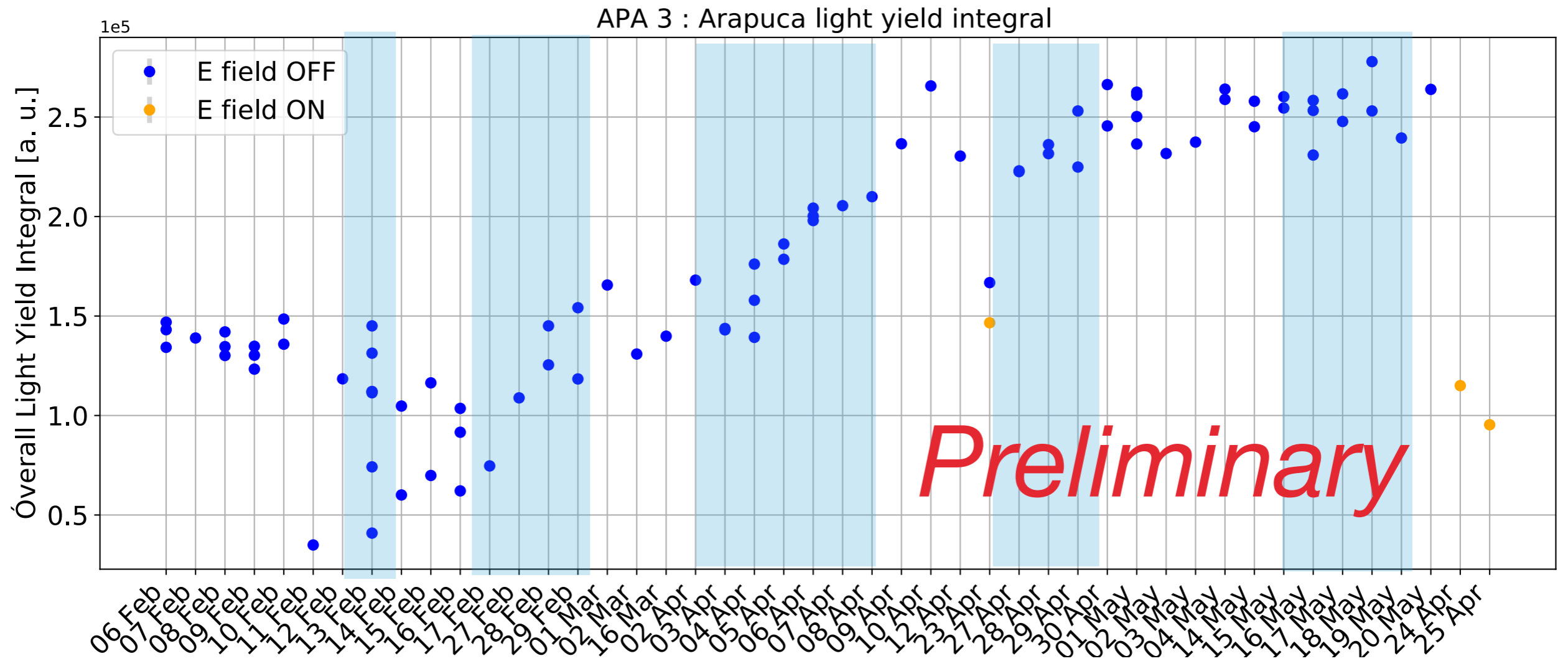
APA 3 :



APA 6:

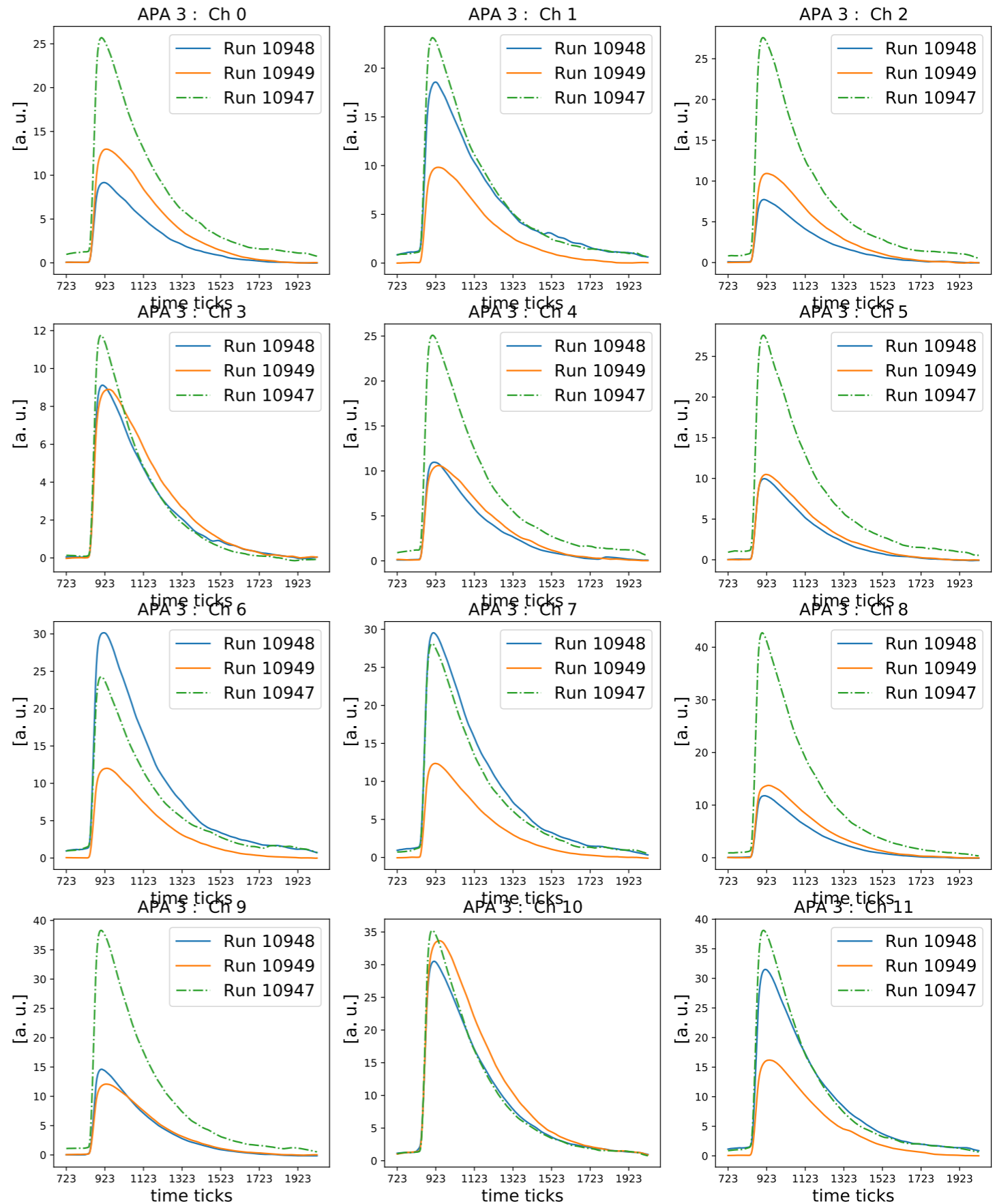


APA 3 : INTEGRAL



SOME INVESTIGATIONS:

Run	Day	h
10947	13 Feb	6 pm
10948	13 Feb	10 pm
10949	14 Feb	8:30 am



SOME INVESTIGATIONS

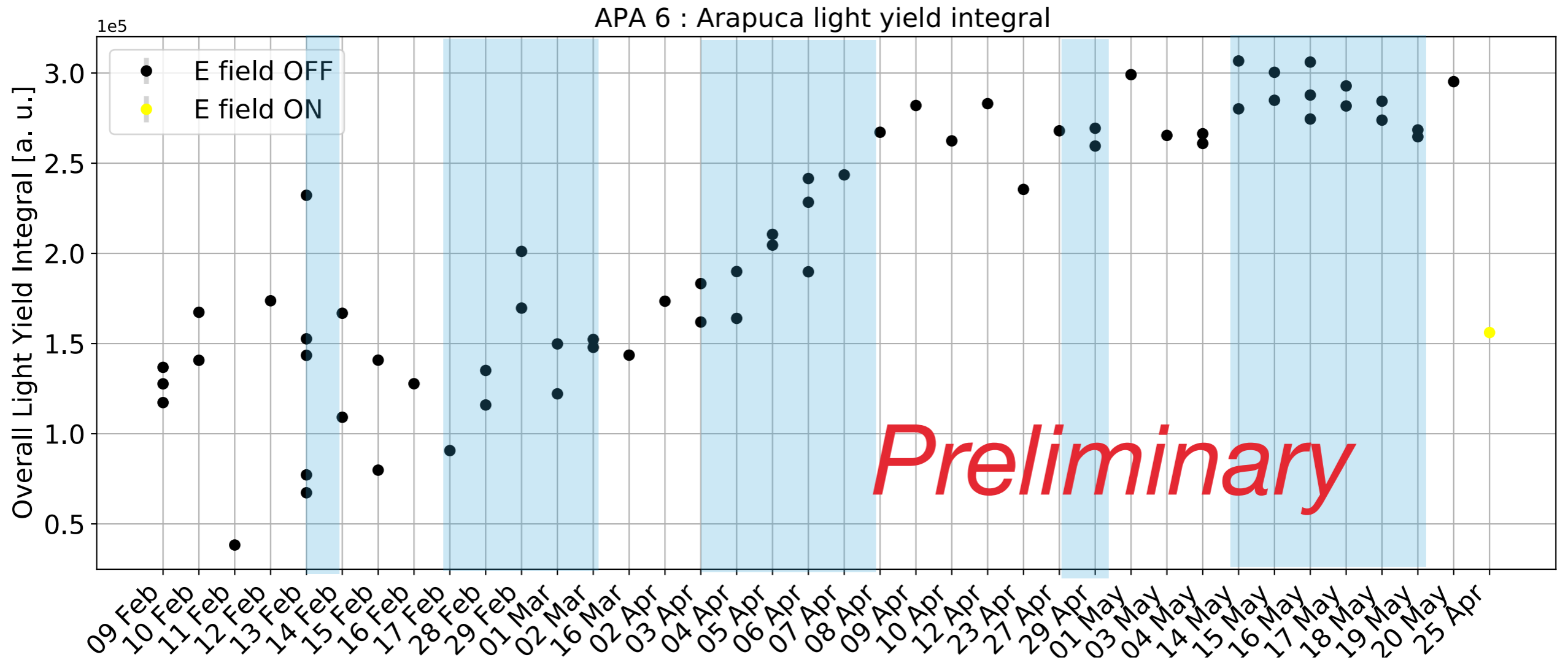


Run Number Day/Time E Field Integral sqrt(n sel. evts)

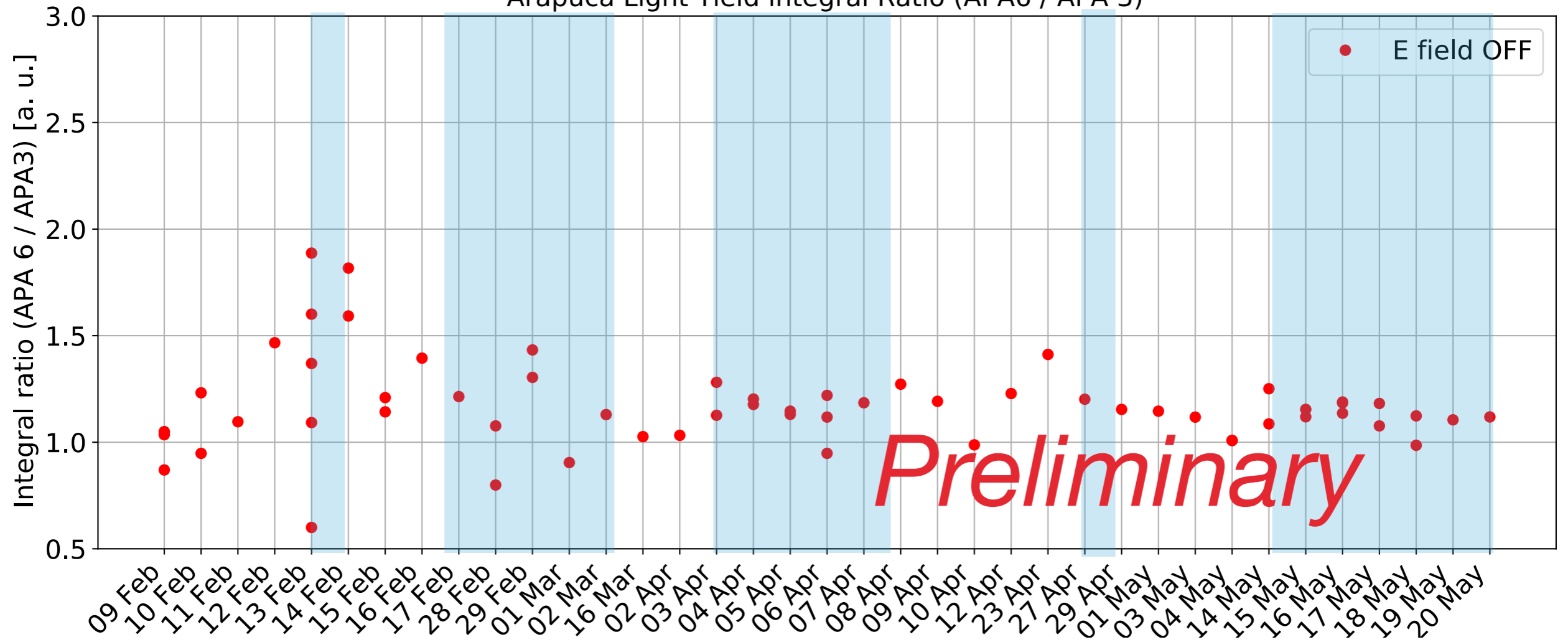
10922	2020-02-10	2020-02-10 15:40:03+00:00	False	148478.395055	55.127126	
10928	2020-02-11	2020-02-11 17:37:52+00:00	False	34931.710491	242.812685	10 min run
10933	2020-02-12	2020-02-12 14:48:54+00:00	False	118429.225194	181.469006	
10940	2020-02-13	2020-02-13 10:25:28+00:00	False	40894.418835	220.936643	< 1h run
10941	2020-02-13	2020-02-13 11:59:56+00:00	False	145039.758487	132.789307	
10943	2020-02-13	2020-02-13 14:09:54+00:00	False	131320.699752	140.107102	← First run after the doping
10944	2020-02-13	2020-02-13 14:40:36+00:00	False	111422.029359	126.210142	
10945	2020-02-13	2020-02-13 15:09:29+00:00	False	112004.169626	189.849941	
10947	2020-02-13	2020-02-13 18:08:48+00:00	False	112055.283675	226.678186	
10948	2020-02-13	2020-02-13 21:55:42+00:00	False	74183.961470	308.137956	
10949	2020-02-14	2020-02-14 08:29:09+00:00	False	60056.148187	350.164247	
10951	2020-02-14	2020-02-14 21:29:27+00:00	False	104745.363973	295.634910	
10952	2020-02-15	2020-02-15 07:52:13+00:00	False	69850.336050	349.701301	
10953	2020-02-15	2020-02-15 21:43:12+00:00	False	116407.156863	267.762955	
10954	2020-02-16	2020-02-16 11:11:19+00:00	False	91586.479362	307.948048	
10956	2020-02-16	2020-02-16 14:31:34+00:00	False	103567.335789	291.960614	
10959	2020-02-16	2020-02-16 22:25:46+00:00	False	62113.737500	349.509657	
10960	2020-02-17	2020-02-17 08:18:53+00:00	False	74659.602673	348.081887	
11013	2020-02-27	2020-02-27 16:37:52+00:00	False	108863.479248	301.176028	

Time periodicity?

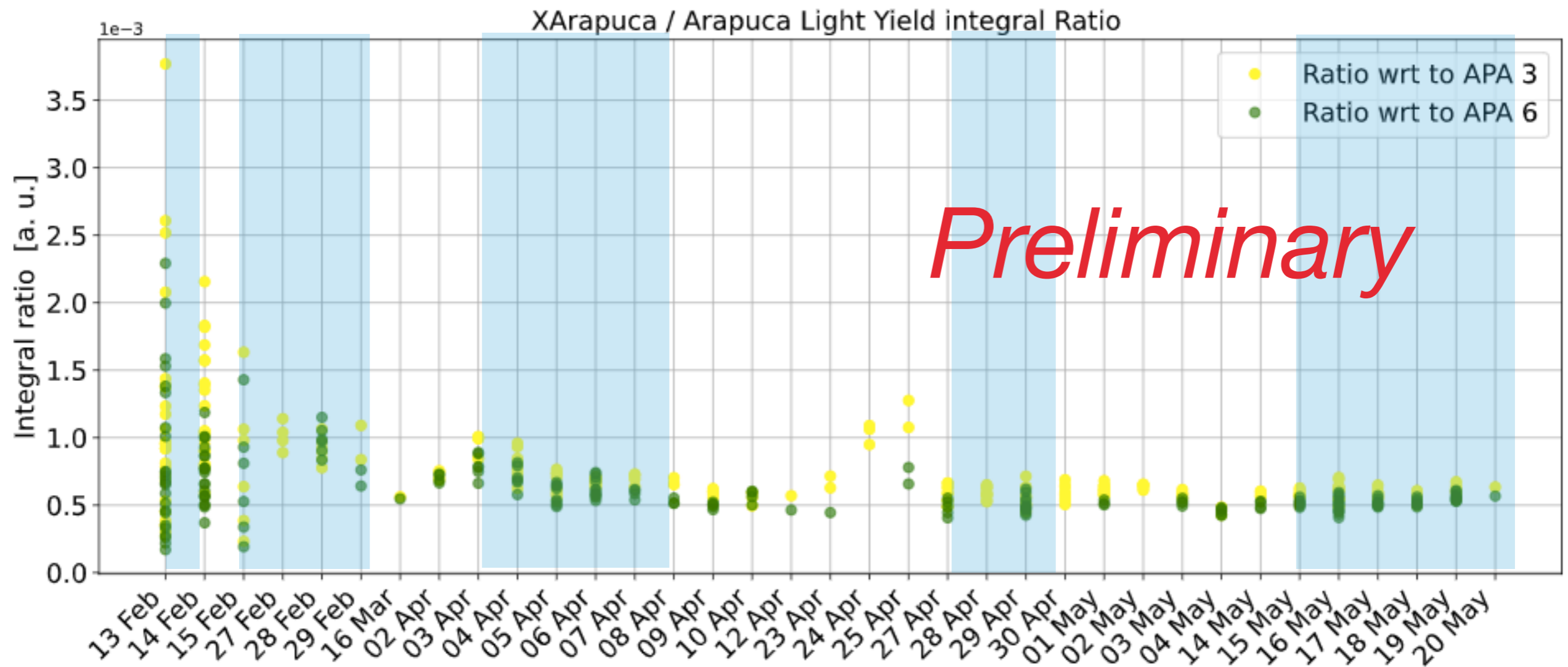
APA 6 INTEGRAL



Arapuca Light Yield integral Ratio (APA6 / APA3)

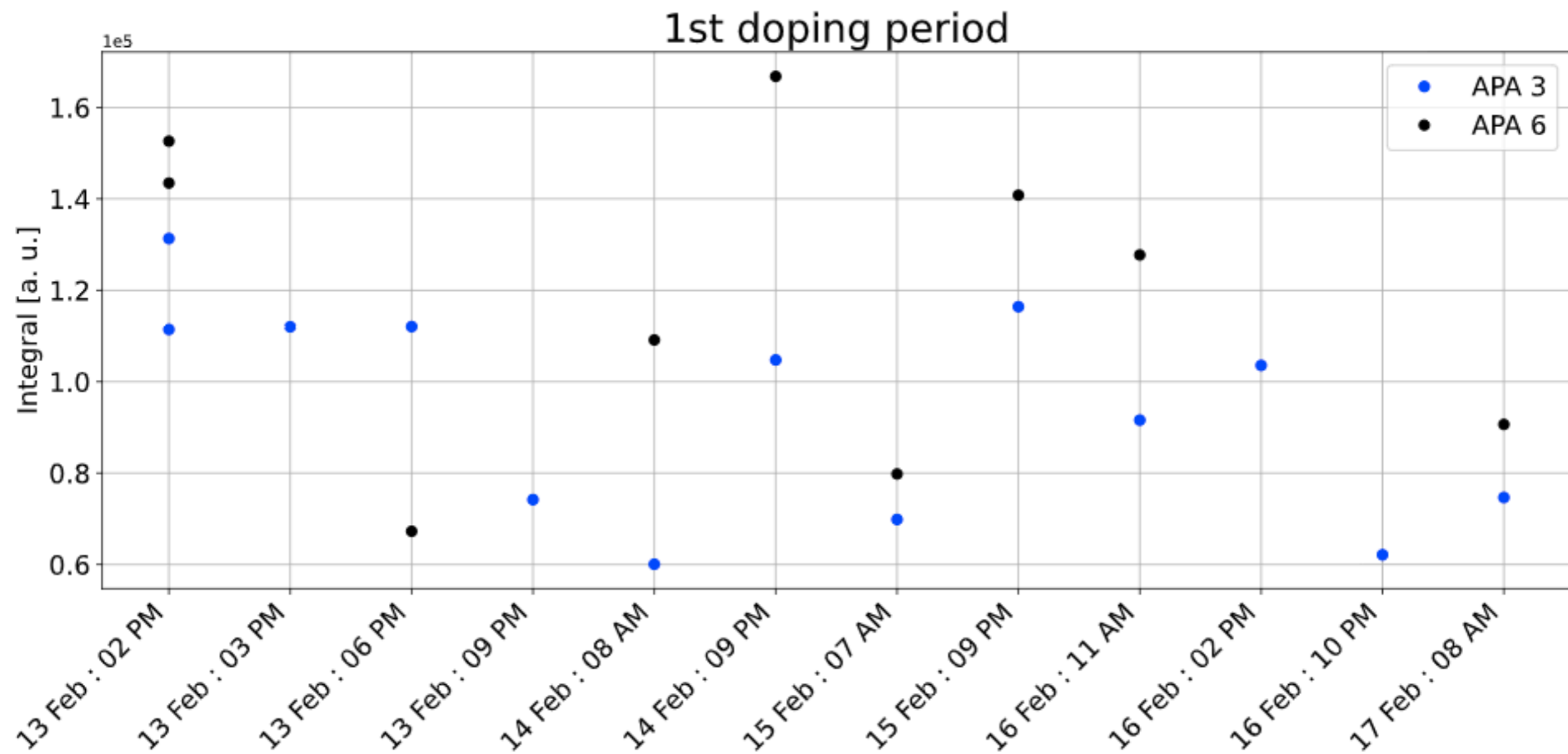


RATIO XARAPUCA -ARAPUCA

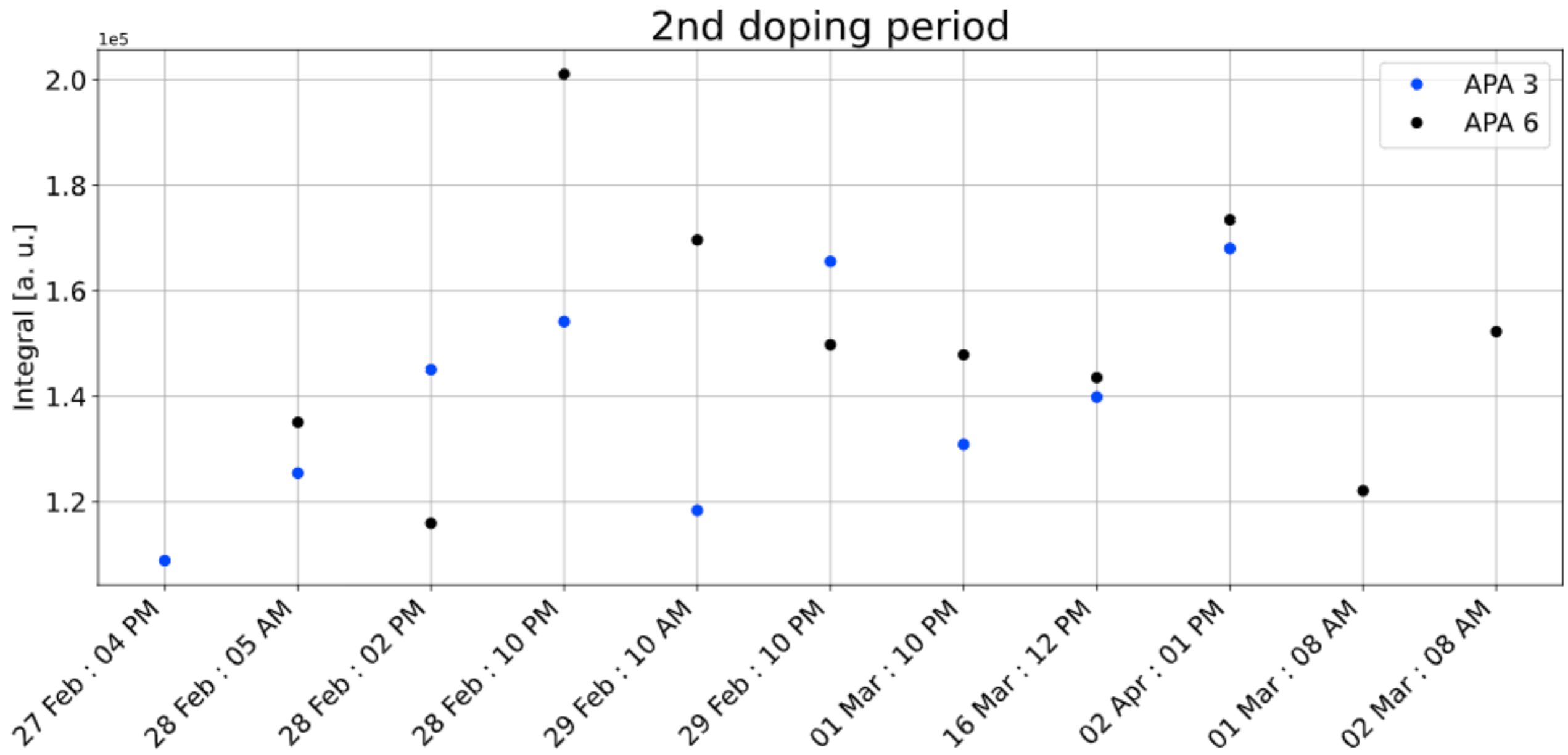


**ATTEMPT TO STUDY Xe
DIFFUSION IN**

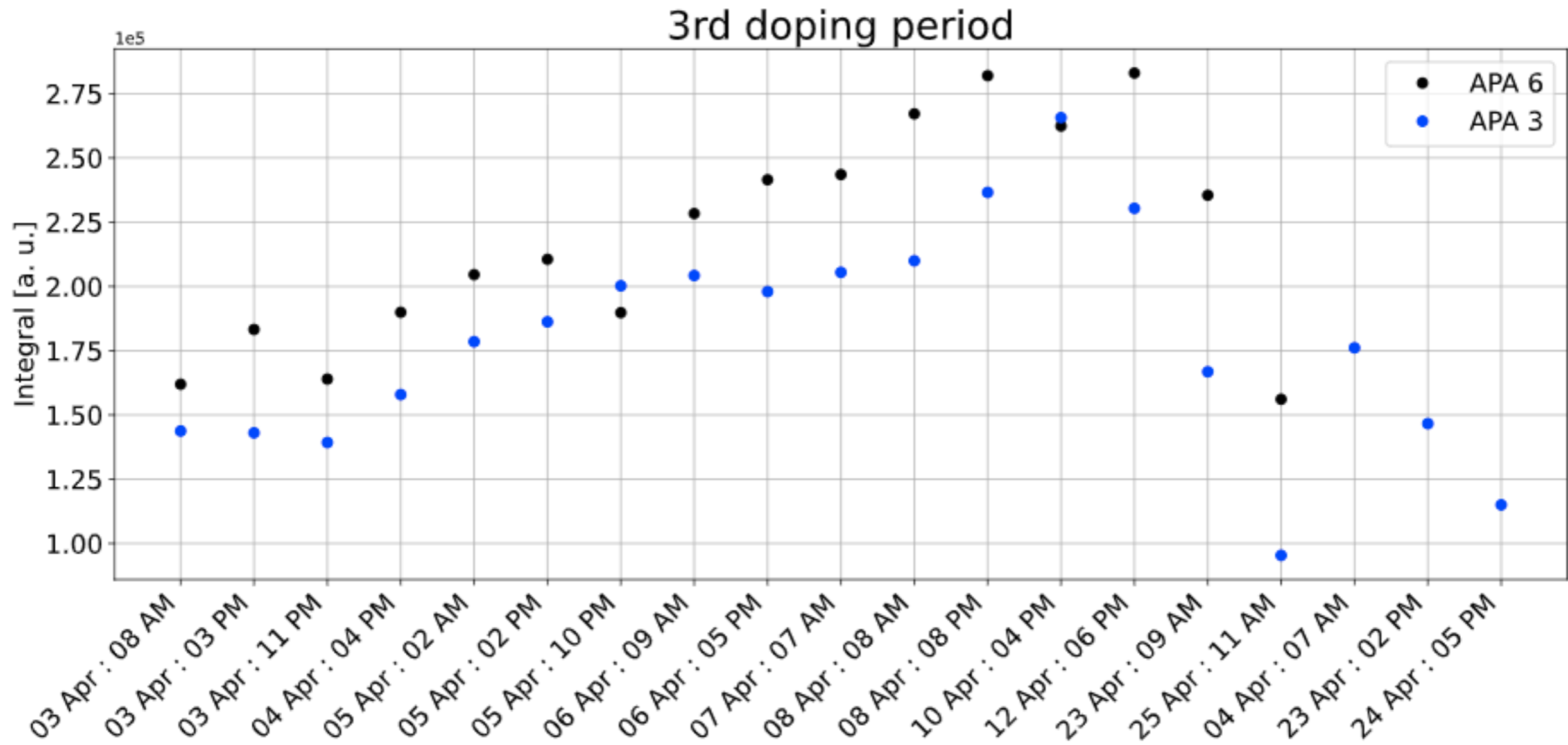
1ST DOPING



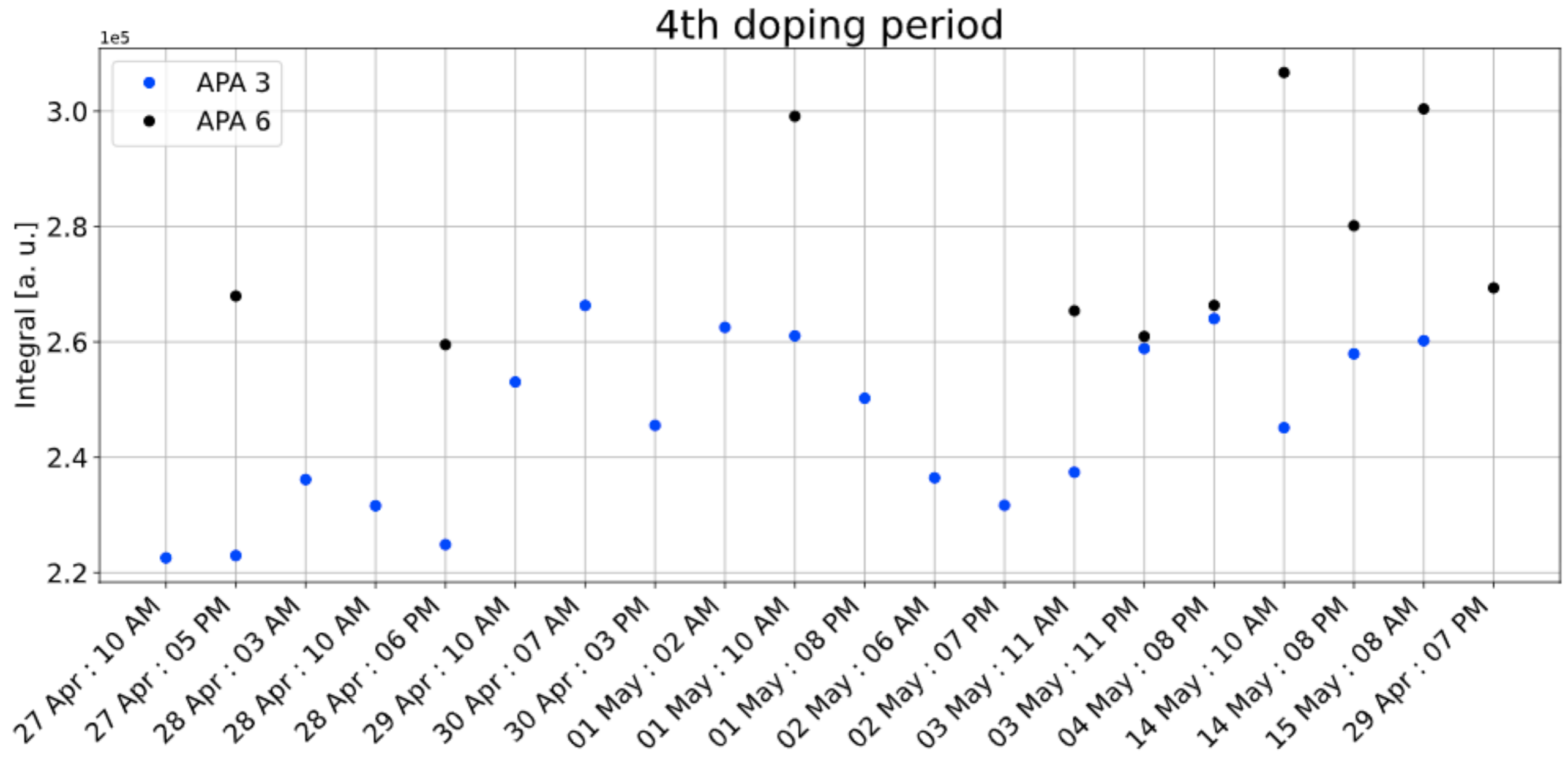
2ND DOPING



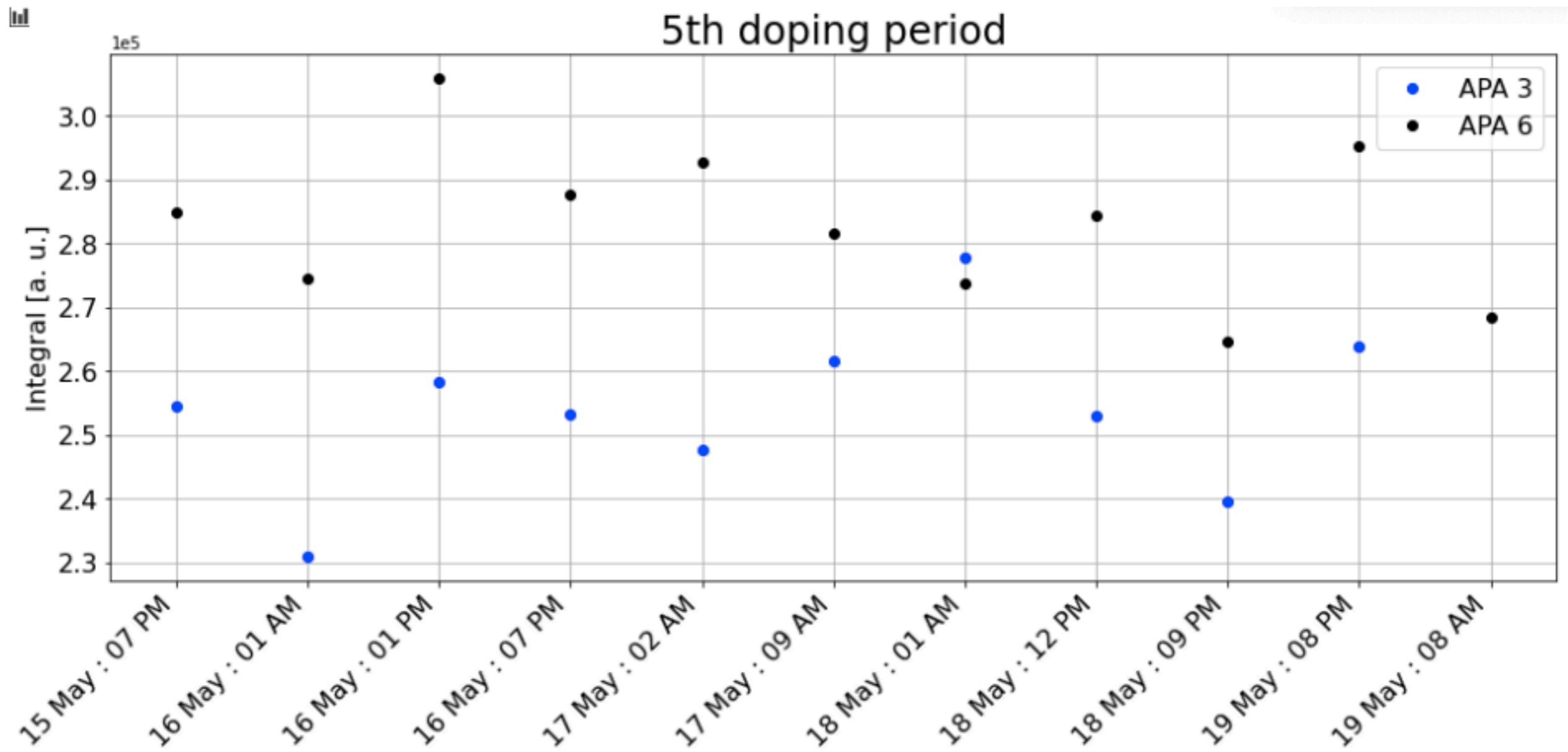
3RD DOPING



4TH DOPING



5TH DOPING



NEXT STEPS

- ▶ Continue the cleanup of runs and adding new data
- ▶ Few ideas about how to better access the Xe diffusion inside the pDUNE volume
 - ▶ study of long runs performing integrals per hours
 - ▶ using other PD detectors to exploit information also on height and different APAs