|C, P=-1, M=0>

Vertical (State Preparation) STIRAP
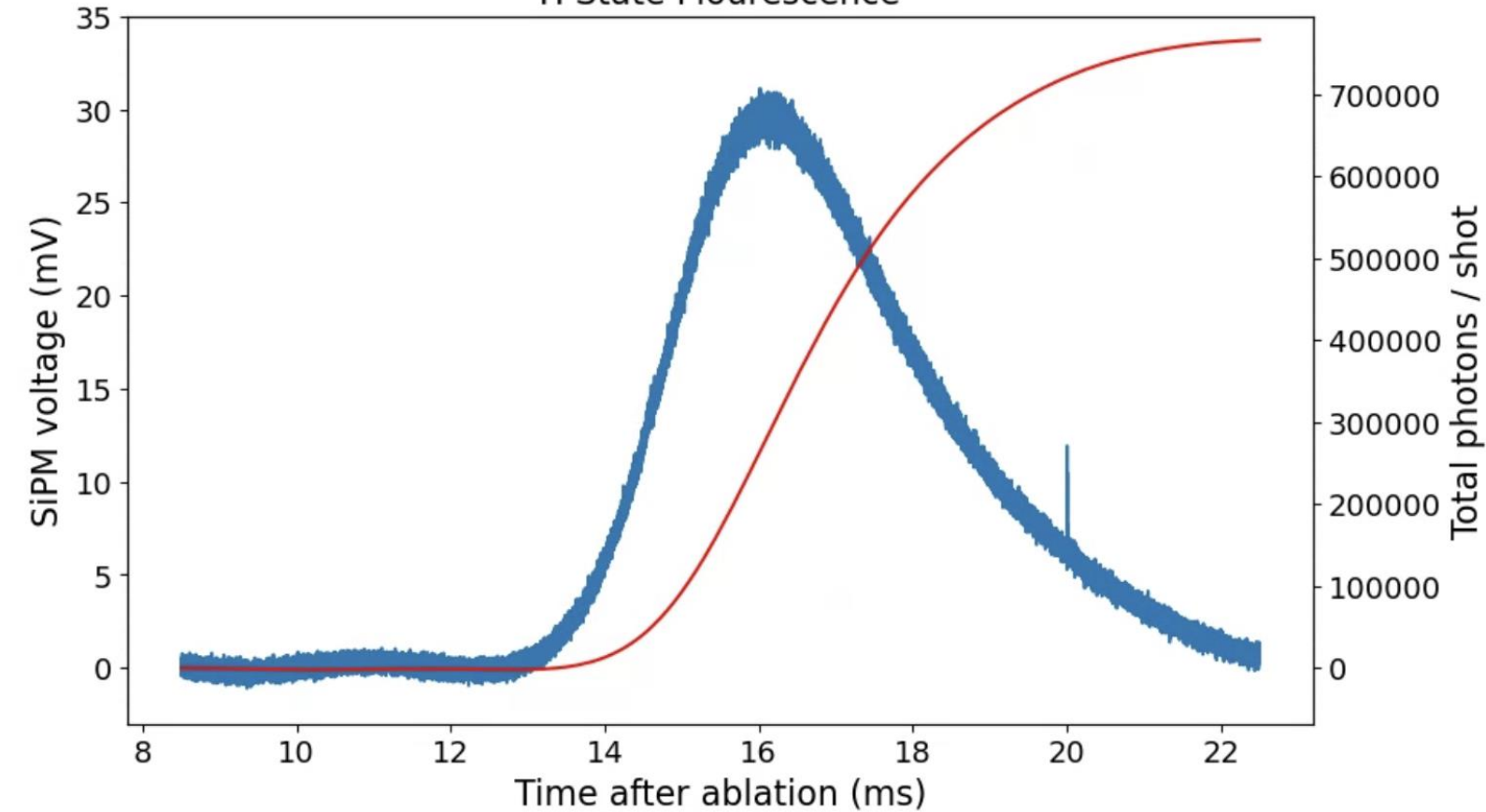
|X, J=0, M=0>

|H, M=-1, N=+1>

|H, M=+1, N=+1>

H State Flourescence

- Observe ~ 7×10^5 photons/shot
- Currently about a factor of 10 smaller than we projected from first observation of Q state downstream.

Optimize everything from upstream to downstream

- Same target for several months -> Factor of ~x2-x3
  - Will swap out target in near future
- Rotational cooling
  - Currently only have gain of ~x1.8, should be able to get ~x3.5
  - Remaining gain of ~x2
- First STIRAP (X -> C -> Q)
  - Expect this is already very efficient based on Q state population
- Second STIRAP (Q -> C -> X)
  - By comparison with pure optical pumping, appears to only be ~50% efficient
  - Should be able to get another factor of x1.6
    - Previously could only see depletion, very hard to optimize in this configuration
- Vertical STIRAP (X -> C -> H)
  - Just got this working, so almost certainly room to improve here

Should be able to get an order of magnitude more population in H