Observations(j:GS_61794247,j:277433131,j:GS_cluster_768082219_768082220
):
-traffic lights flicker too frequently
-traffic lights can stay in any phase for as long as the learner wants
-traffic lights can converge to a stable state== one light will be red permanently
-lights go green eventually, probably because waiting time accumulates, so it is not a total failure
-the traffic light can change from any phase to any other phase
-most of the time, there are no cars nearby, so there is nothing to win when switching, nothing can be learned
-junction are often times in situations or layouts that prevent local optimization
-clusters of junctions are too big to be controlled, but don'T always need to be
-how many cars are on the lane? It could influence the reward function=> when cars are leaving it is a good thing
-i think live traffic data → how many cars frequent the intersection/junction should be included in the clustering analysis.
-because green lights are rewarded and red lights penalized, the learner stabilizes in a green state or in yellow in smaller traffic lights which is neither good or bad. It is an undesirable behaviour :'(

https://youtu.be/1AXYRfx1jkA

second reward function:
fluctuation is reduced
positive reward for going green seems to be too small
the states still change irradically, from green to red, from yellow to the other yellow
-still the learner can converge to non periodic, stable behavior. This is bad for traffic actuation, can be seen in the video for 'GS_61794247', probably the negative rewards are too strong
-decelleration is not in the state space, it is probably needed to learn about yellow phases
GS_61794247 the 5 lane junction, seems to have converged to a fixed state :-(
GS_cluster_768082219_768082220: 7 lane junction seems to work out ok. The learner behaves differently for different sizes, *maybe I should try different states and reward functions and not just different instances of the same learner! Create artificial instances of junctions using the clusters and train on them!*
-the learners do not have the cars progression on the lane/ distance to the traffic light, they can only make use of the amount of cars on the lane, so they get influenced by cars on the beginning of a lane which can be a bad thing

https://youtu.be/lML3b64DYZw