

EoS Figures: Ionization and Recombination of Hydrogen

Luke Chamandy,^{*}

Department of Physics and Astronomy, University of Rochester, Rochester NY 14627, USA

2nd March 2022

ABSTRACT

Figures

Key words: binaries: close – stars: evolution – stars: kinematics and dynamics – stars: mass loss – stars: winds, outflows – hydrodynamics

^{*} lchamandy@pas.rochester.edu

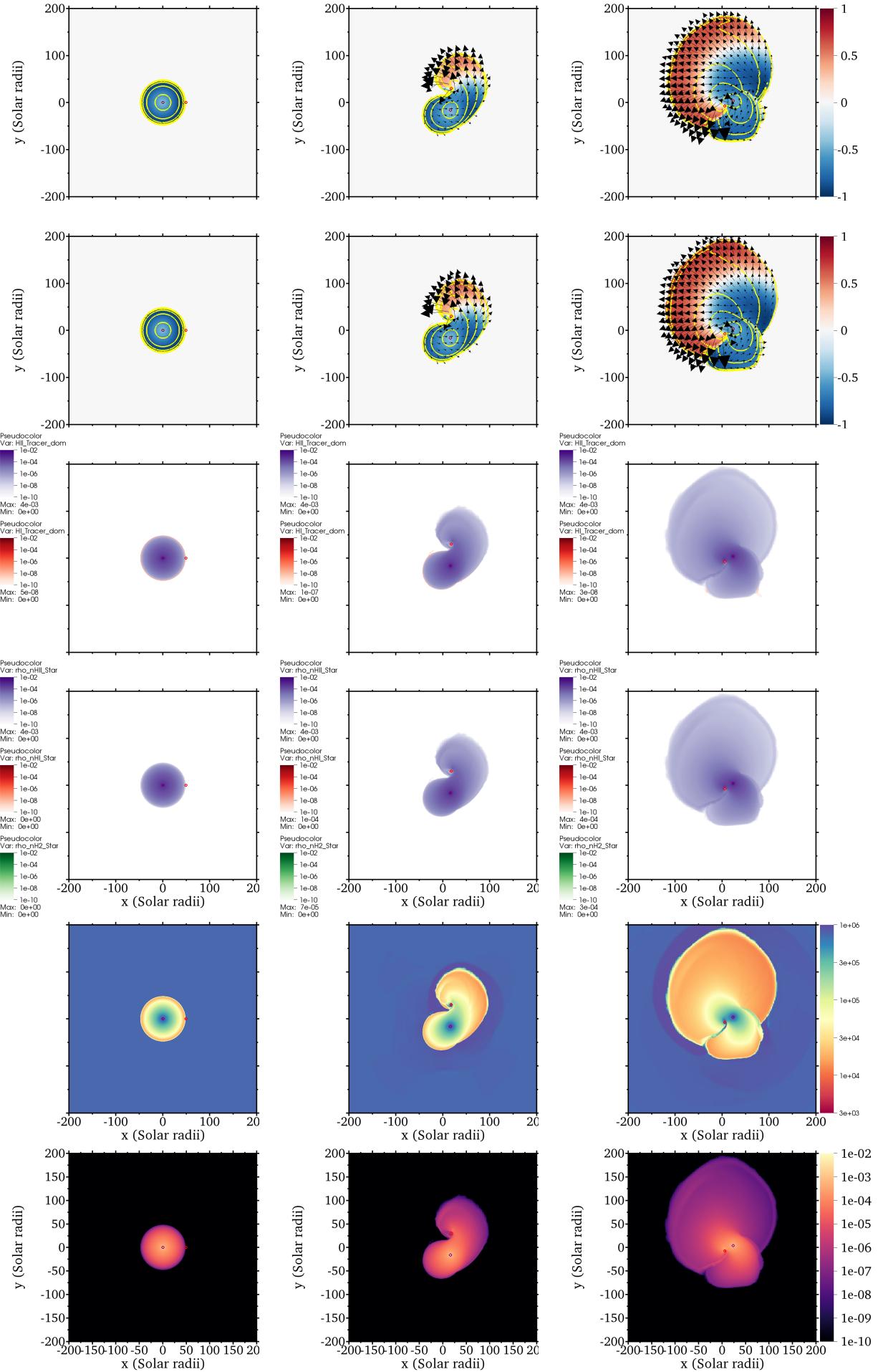


Figure 1. Columns show $t = 0, 5.8$ and 11.6 d . Rows are: (1) Normalized binding energy density of star tracer gas for Run 282 ($y = 5/3$ ideal gas), (2) Normalized binding energy density of star tracer gas for Run 277 (MESA EOS without radiation energy)), (3) Gas density at location where a given H tracer density is highest for Run 277, (4) Gas density at location where a given H ionization state is highest, (5) Gas temperature, (6) Gas density. MNRAS 000, 000–000 (0000)

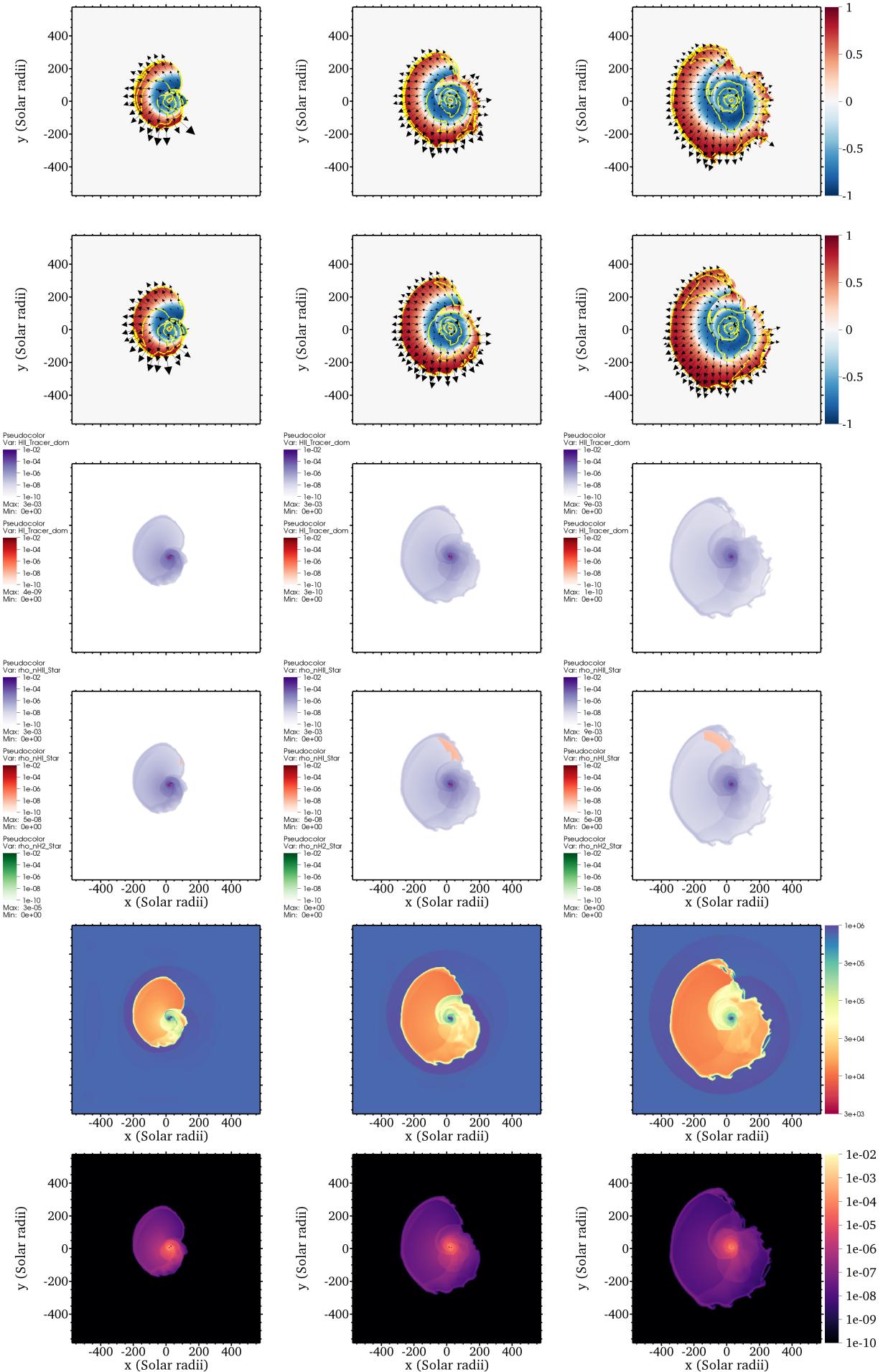


Figure 2. Continuation of Fig. 1 for times $t = 17.4, 23.1$ and 28.9 d.

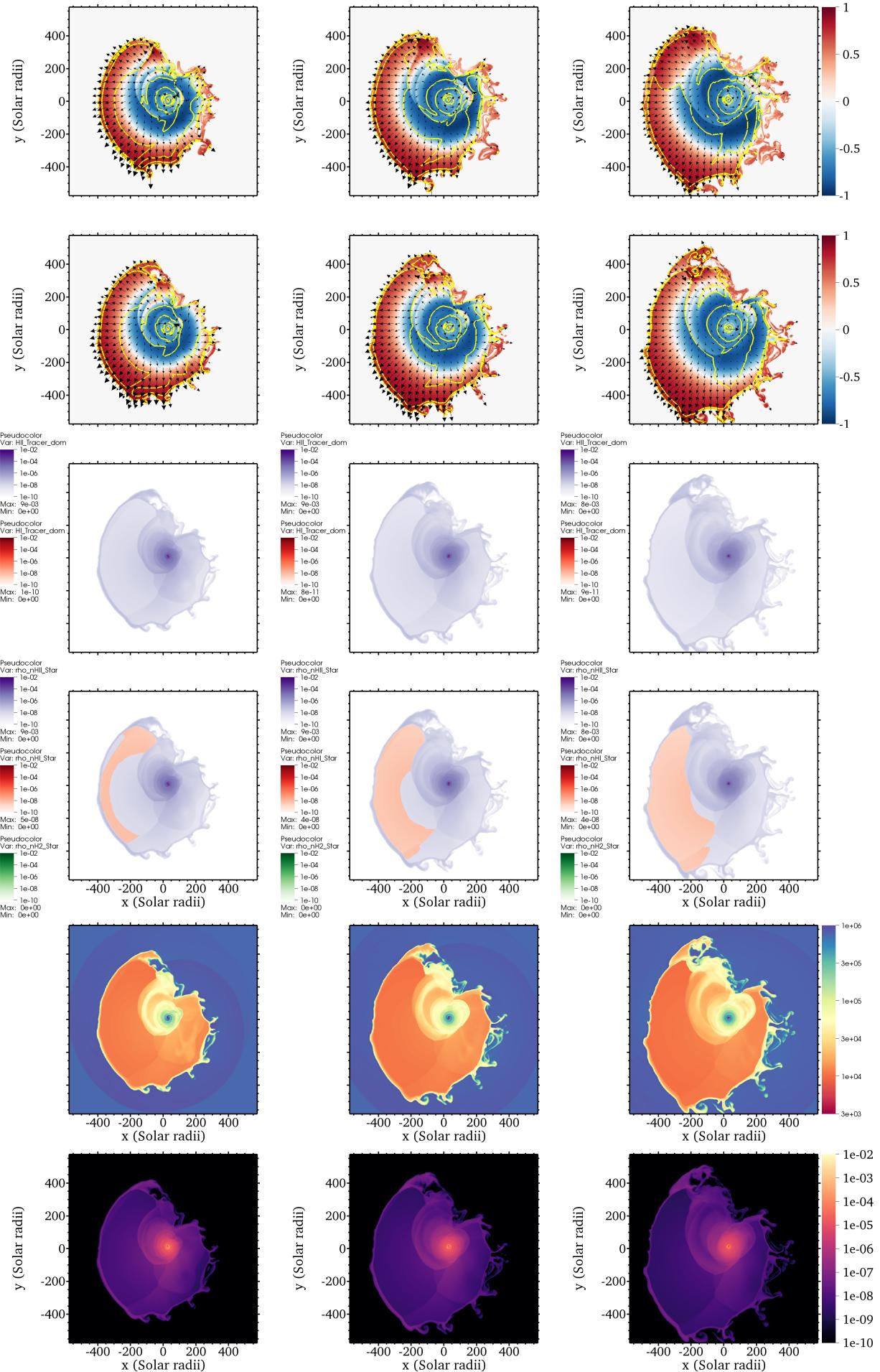


Figure 3. Continuation of Fig. 1 for times $t = 34.7, 40.5$ and 46.3 d.

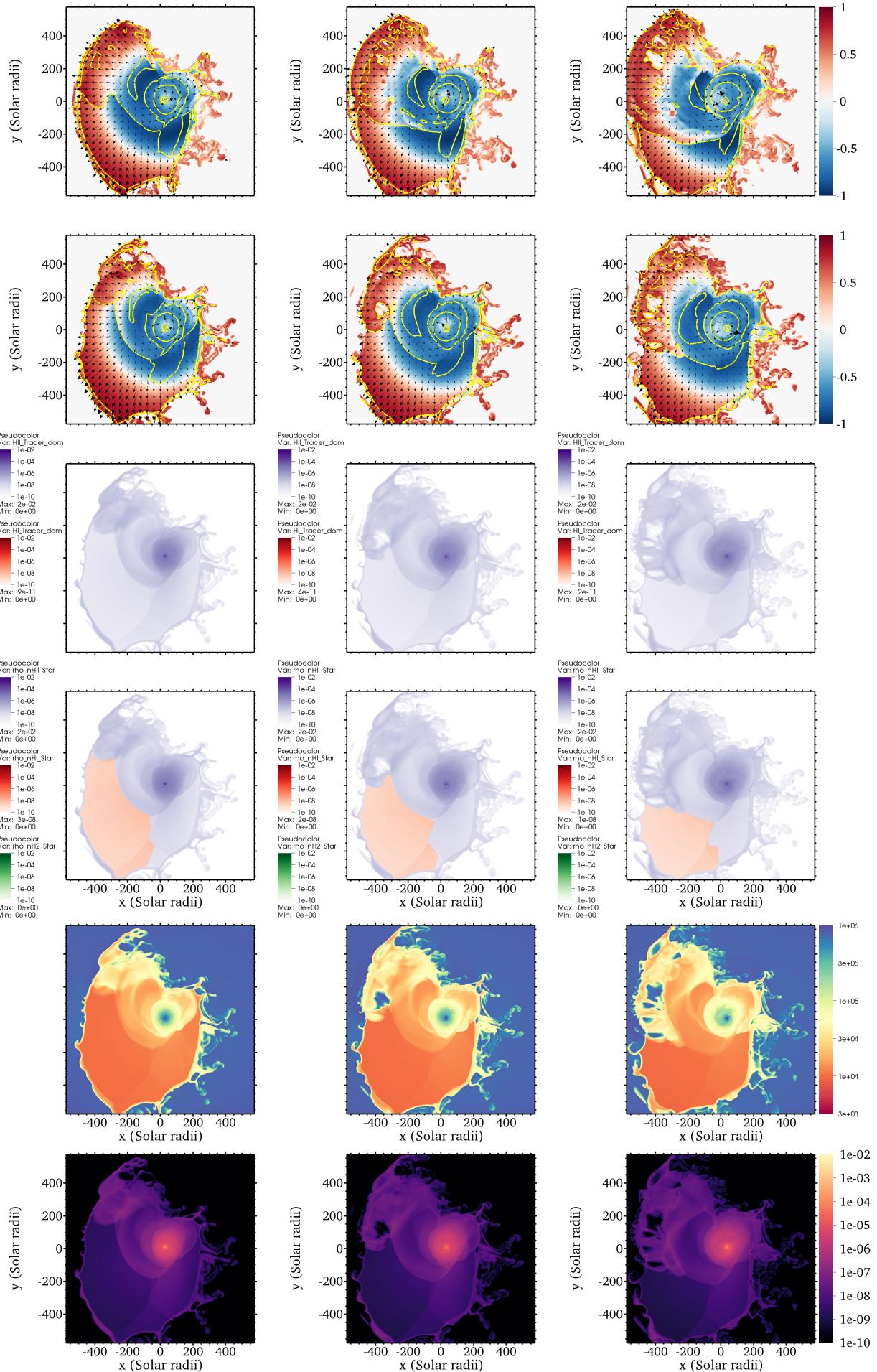


Figure 4. Continuation of Fig. 1 for times $t = 52.1, 57.9$ and 63.7 d.

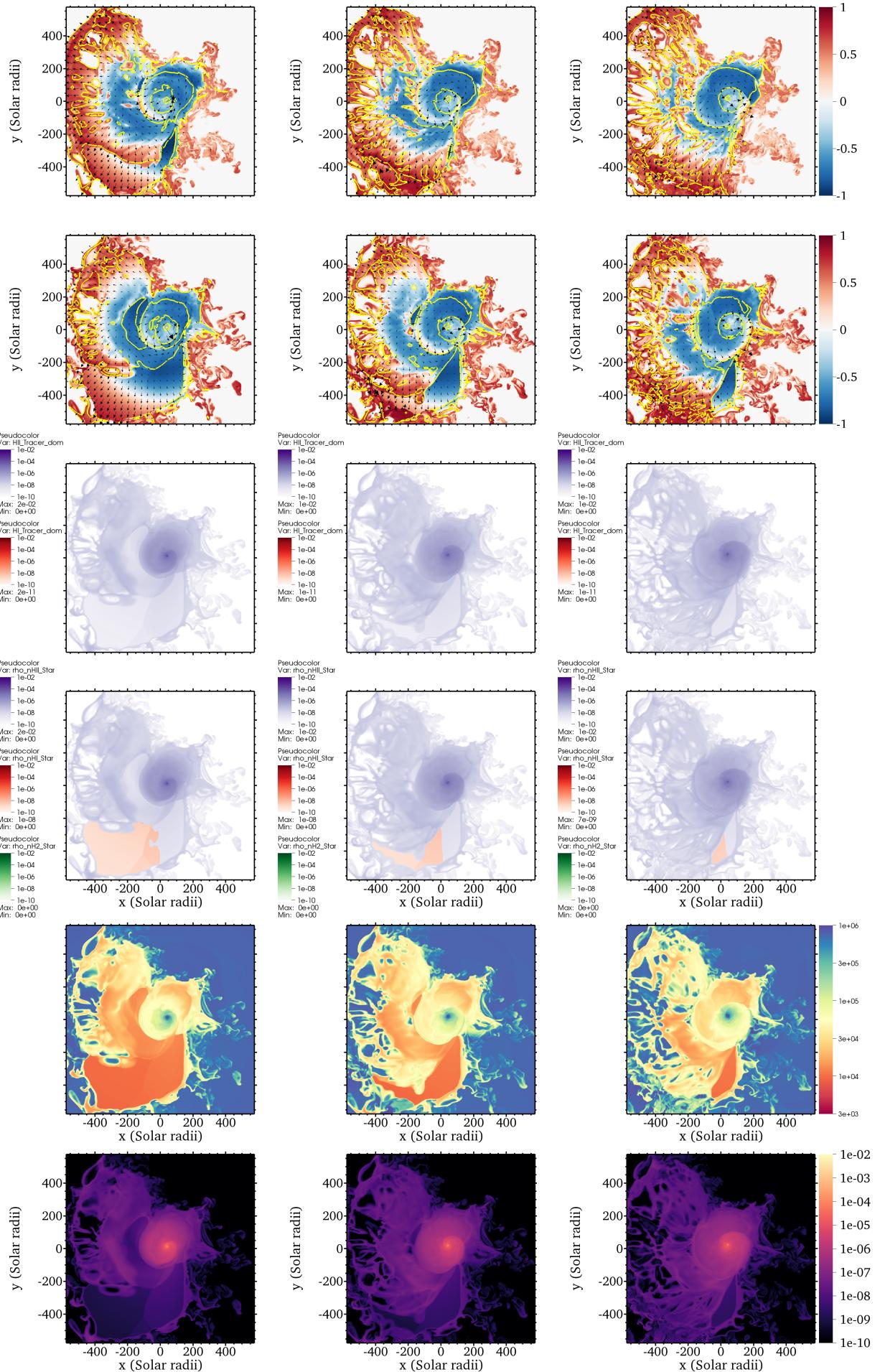


Figure 5. Continuation of Fig. 1 for times $t = 69.4, 75.2$ and 81.0 d.

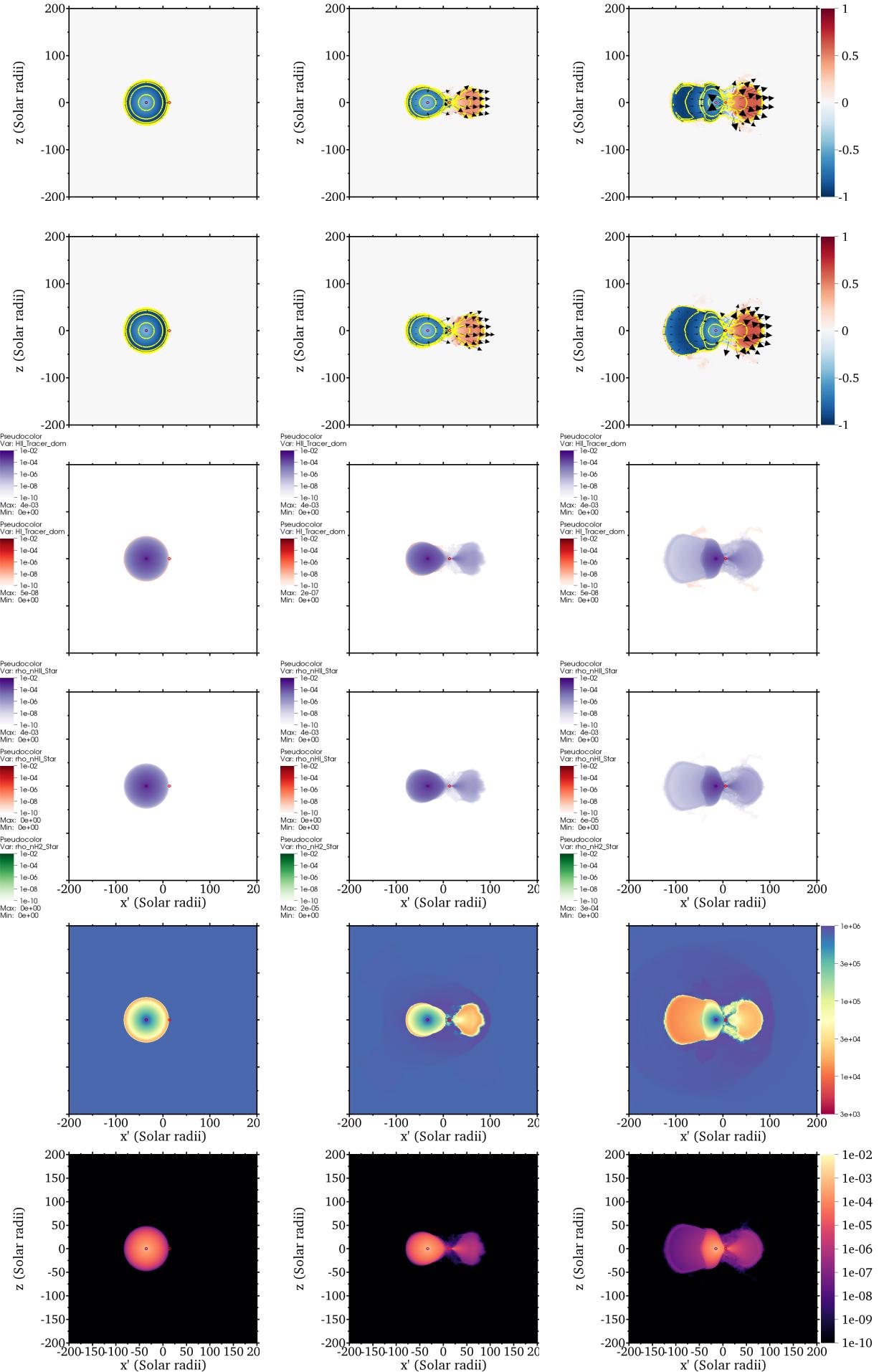


Figure 6. Columns show $t = 0, 5.8 \text{ and } 11.6 \text{ d}$. Rows are: (1) HeI-dominant gas tracer, (2) HeII-dominant gas tracer, (3) HeIII-dominant gas tracer, (4) Normalized binding energy density of star tracer gas, (5) Current dominant local ionization state of gas, (6) Gas temperature. MNRAS **000**, 000–000 (0000)

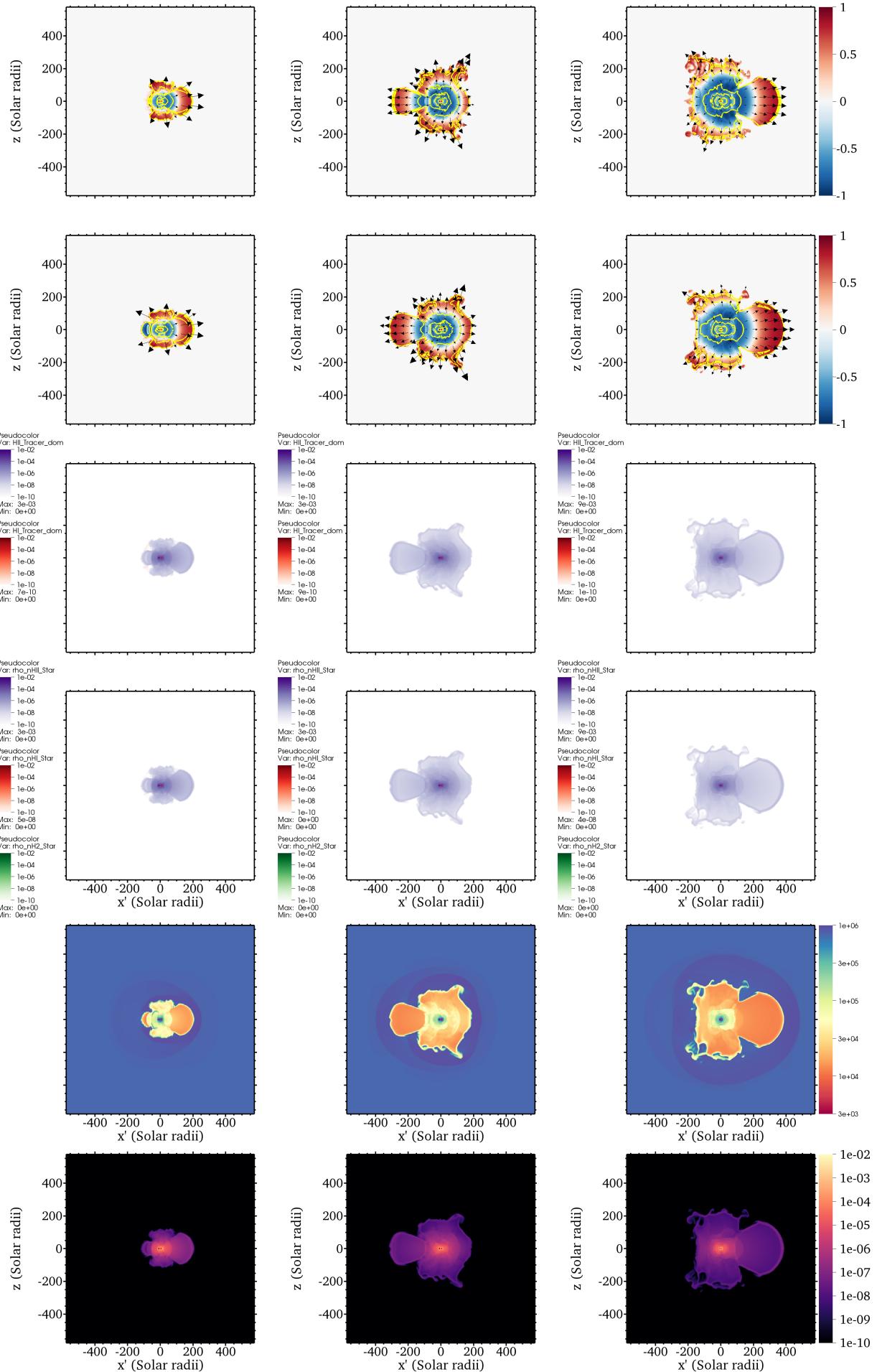


Figure 7. Continuation of Fig. ?? for times $t = 17.4, 23.1$ and 28.9 d.

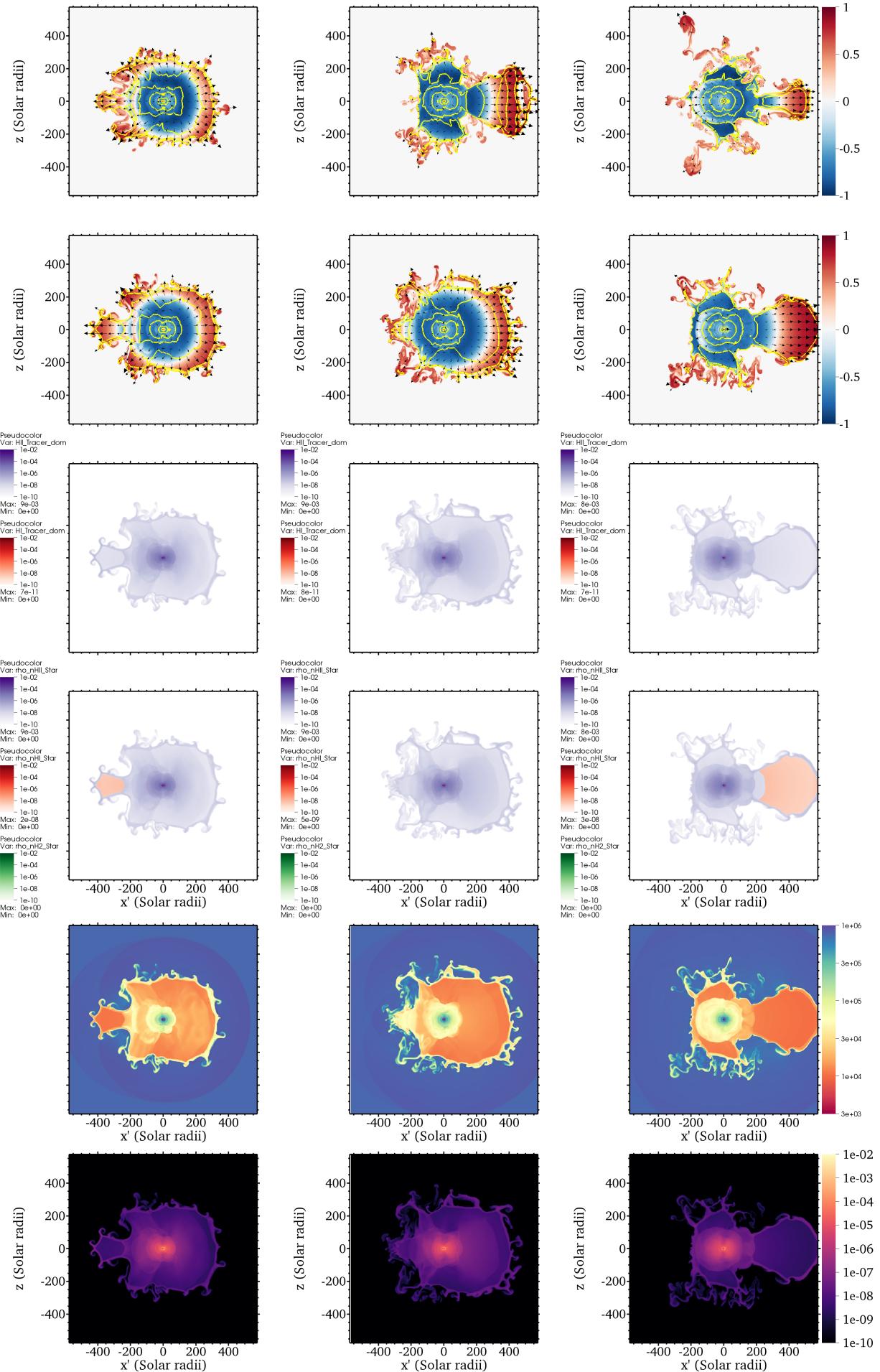


Figure 8. Continuation of Fig. ?? for times $t = 34.7, 40.5$ and 46.3 d.

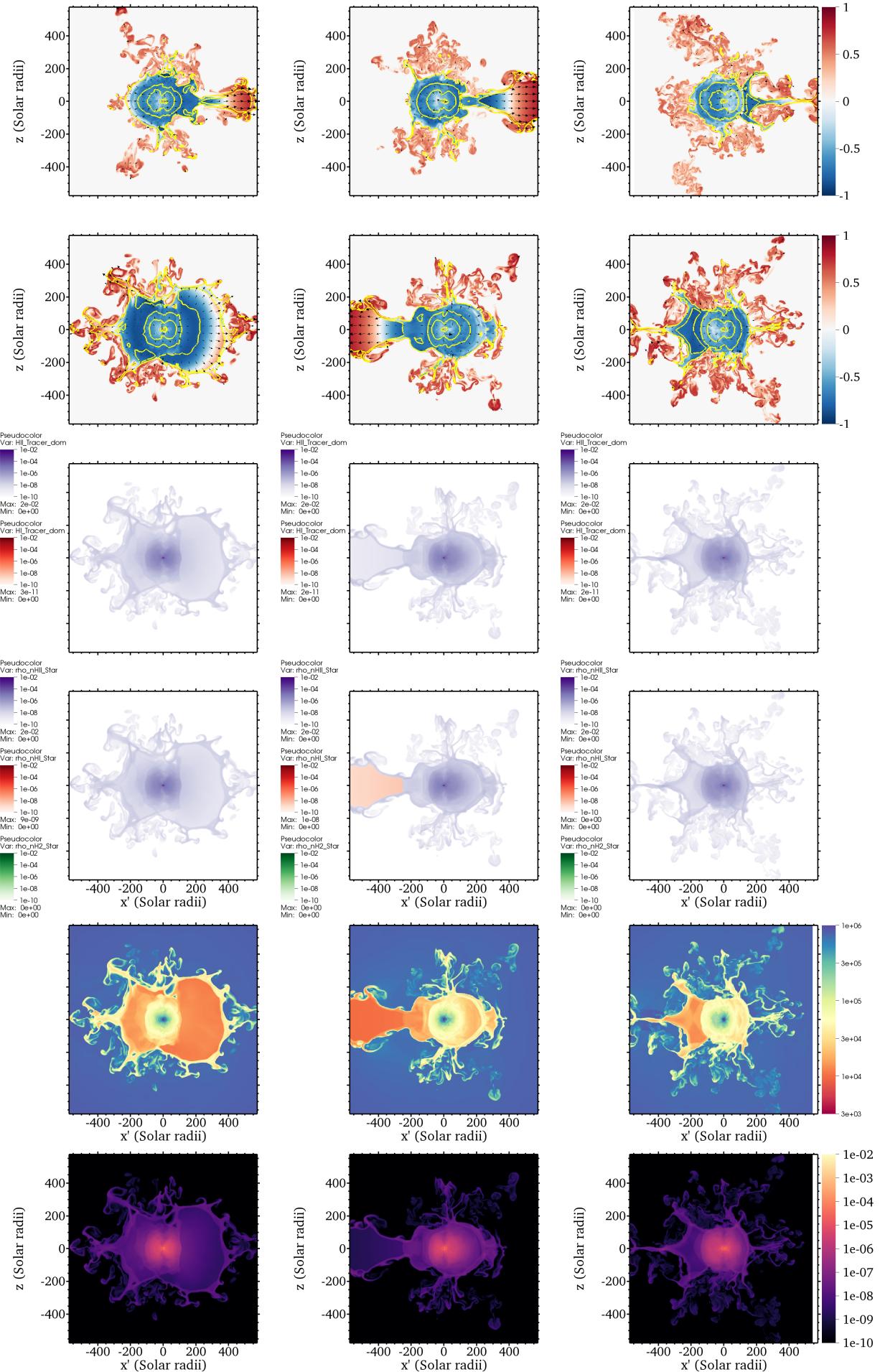


Figure 9. Continuation of Fig. ?? for times $t = 52.1, 57.9$ and 63.7 d.

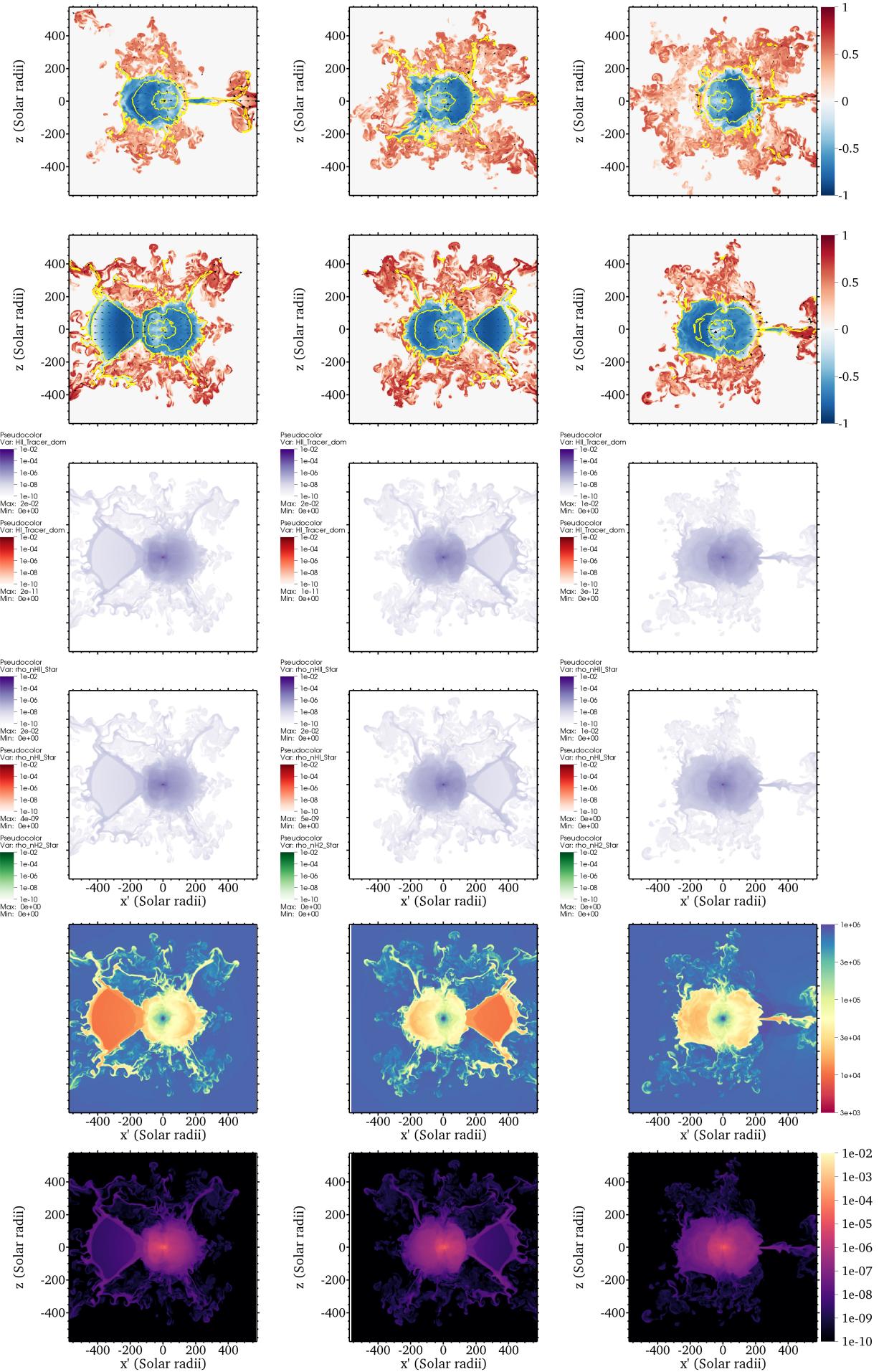


Figure 10. Continuation of Fig. ?? for times $t = 69.4, 75.2$ and 81.0 d.