

$$\begin{aligned}
 v_r &= \left(\frac{\lambda_{obs} - \lambda_{rest}}{\lambda_{rest}} \right) c \\
 &= \left(\frac{6590\text{\AA} - 6560\text{\AA}}{6560\text{\AA}} \right) \cdot 3 \times 10^8 \text{m/s} \\
 &= 1.2 \times 10^6 \text{m/s}
 \end{aligned}$$