

Laboratory observation of C and O emission lines of WD *H1504+65* -like atmosphere model

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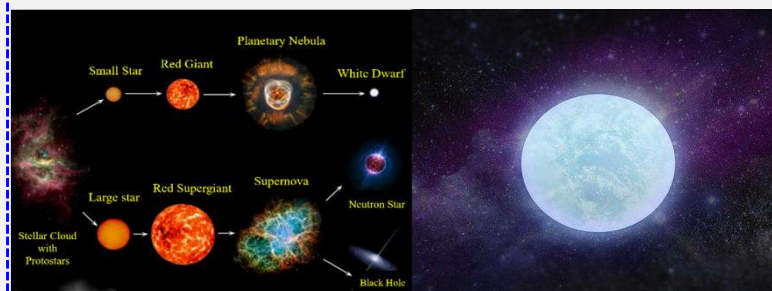
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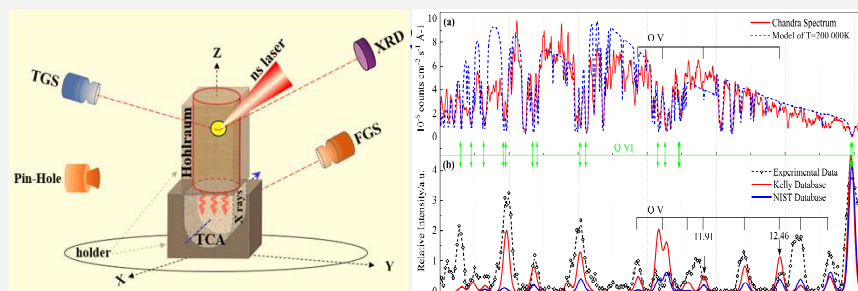
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Introduction



- WD H1504+65, the hottest known post-asymptotic giant branch star, is peculiar due to its C-and O-rich but He- and H-deficient atmosphere that cannot be well predicted by current stellar evolution models.
- Some weak lines in the Chandra spectrum are still not well-identified, and the range of 14-90nm was not observed because of the high interstellar density.

Experiment and



- Our experiment was carried out at the XG-III laser facility, The target consists of a gold hohlraum and a TCA foam, which has similar C/O fractions to H1504+65;
- The T_e of our plasma diagnosed by Boltzmann plot with 195 000 K is consistent with the WD temperature models;
- Similar strong O lines are observed, while abundant O V lines in the weak range were identified in our work.

Conclusions

- A plasma sample with a similar temperature and composition ratio as the WD H1504+65 was created in the laboratory, and the indirect heating method will be applied to a broader range of cosmic conditions;
- Abundant O and C lines are observed in our case, and our result provides support for the line identifications and model benchmark.

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