

University of Groningen

Organic chemistry around young high-mass stars

Allen, Veronica Amber

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2018

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Allen, V. A. (2018). *Organic chemistry around young high-mass stars: Observational and theoretical*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Propositions
accompanying the dissertation
Organic chemistry around young high-mass stars:
Observational and theoretical

1. (Chapter 2) The high-mass star-forming region G35.20-0.74N (G35.20) contains several hot cores with significant chemical diversity, which is at odds with the uniform rotation.
2. (Chapter 3) The chemical difference within G35.20 B is due to an elevated cosmic-ray ionization rate and an age difference between sources of ~2000 years.
3. (Chapter 3) The presence of complex cyanides like vinyl (CH_2CHCN) and ethyl ($\text{C}_2\text{H}_5\text{CN}$) cyanide can be used as a chemical clock in hot cores.
4. (Chapter 4) The detection of multiple outflow components associated with G35.20 B strengthens the case for the Keplerian disk around the multiple protostellar system.
5. (Chapter 5) Our study of the prebiotic molecular species formamide (NH_2CHO) reveals that a larger study including a variety of environments is needed to understand how this species is formed in interstellar space.
6. “Complex” is a relative term, with extremely different meanings in astrochemistry and materials science.
7. Astrochemistry is a community of scientists with vastly different skill sets (observers, theorists, and experimentalists) that will need to learn to communicate with each other if we hope to formulate an understanding of the universe.
8. Always question the status quo – values that have been “standard” for 20 years may no longer be relevant.
9. The path to diversity is paved by those who suffered through the old system while the new one was being born. Never be afraid to pursue the life you want.
10. Representation sends a message to the next generation. If you belong to an under-represented group in a diverse workplace, your presence may be a beacon to the next generation. Supporting such people and sharing their stories is just as important.
11. With determination, the right support network, and a certain amount of craziness, you can be a successful researcher while raising children to be kind, insightful, and tenacious.
12. Learning when and how to ask for help is an important part of “growing up”, especially for extremely independent people.
13. The next generation controls the future, so sharing our passions with them secures a place for those passions for the generations to come.
14. Living and working among different cultures is an excellent path toward understanding and peace between them.

Groningen, July 2018
Veronica Allen