

Dedicated to my constants

Mga, Deuta, Ghonti & Buddy

Declaration by Candidate

I, **ANSHUMAN BORGOHAIN**, declare that the thesis entitled “**Evolution of Clumpy Dwarf Disk Galaxies**” is a record of my own work carried out under the supervision of **Dr. Rupjyoti Gogoi** and **Prof. Kanak Saha** during the period from **July, 2017 to October, 2023**. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree in Doctor of Philosophy at Tezpur University. Where no part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work. I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

Date: 13-05-2024

Place: Tezpur


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TEZPUR UNIVERSITY

Certificate by the Supervisor

This is to certify that the thesis entitled “**Evolution of Clumpy Dwarf Disk Galaxies**”, submitted to the School of Sciences, Tezpur University in partial fulfillment of the requirements for the award of the degree of **Doctor of Philosophy in Physics** is a record of original research work carried out by **Mr. Anshuman Borgohain** under my supervision and guidance.

All help received by him from various sources have been duly acknowledged. No part of this thesis has been submitted elsewhere for award of any other degree.

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Certificate by the Co-Supervisor

This is to certify that the thesis entitled “**Evolution of Clumpy Dwarf Disk Galaxies**”, submitted to the School of Sciences, Tezpur University in partial fulfillment of the requirements for the award of the degree of **Doctor of Philosophy in Physics** is a record of original research work carried out by **Mr. Anshuman Borgohain** under my supervision and guidance.

All help received by him from various sources have been duly acknowledged. No part of this thesis has been submitted elsewhere for award of any other degree.

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Anshuman Borgohain

List of Publications

Publications included in this thesis:

1. **Borghain, A.**, Saha, K. and Gogoi, R. Local BCD survey using UVIT: mass assembly of dwarf galaxies. *in preparation*.
2. **Borghain, A.**, Saha, K., Elmegreen, B., Gogoi, R., Combes, F. and Tandon, S.N. Extended far-ultraviolet emission in distant dwarf galaxies. *Nature*, Volume 607, p. 459-462, 2022.

Publications not included in this thesis:

1. Saha, K. et al. (*includes **Borghain, A.***) AstroSat UV Deep Field South – I. Far and Near-ultraviolet Source Catalog of the GOODS South region. *submitted*.
2. Mondal, C., Saha, K., Bhattacharya, S., **Borghain, A.**, Tandon, S. N., Rafelski, M., Jansen, R. A., Windhorst, R. A., Teplitz, H. I. and Smith, B. M. The AstroSat UV Deep Field North: The Far- and Near-ultraviolet Photometric Catalog. *The Astrophysical Journal Supplement Series*, Volume 264, p. 40, 2023.
3. Paswan, A., Saha, K., **Borghain, A.**, Leitherer, C. and Dhiwar, S. Unveiling an Old Disk around a Massive Young Leaking Blueberry in SDSS-IV MaNGA. *The Astrophysical Journal*, Volume 929, p. 50, 2022.
4. Saha, K., Tandon, S.N., Simmonds, C., Verhamme, A., Paswan, A., Schaerer, D., Rutkowski, M., **Borghain, A.**, Elmegreen, B., Inoue, A.K., Combes,

F., Elmegreen, D. and Paalvast, M. AstroSat detection of Lyman continuum emission from a $z = 1.42$ galaxy. *Nature Astronomy*, Volume 4, p. 1185-1194, 2020.

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