Transit of sun through the seasonal nakṣatra cycle in the Vṛddha-Gārgīya Jyotiṣa

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https://rdcu.be/cFEiH

a walk through of the above paper

Astral Sciences

- Starts with observations of Sun, Moon, Gruhas in the background of taaras
- Progresses from broad observations to finer observations of positions and movements
- Further progresses towards a computational model

Observations to Computations

Vedic	Atharvaveda-pariśiṣṭa (AVP)
Vedāṅga	Parāśara Tantra(PT)
	Vṛddhagārgīyā Jyotiṣa (VGJ)
	Lagadhiyā Vedāṅga Jyotiṣa (LVJ)
Jain	Sūrya-candra-prajñapti (SCP)
Baudha	Śardūlakarṇāvadāna (SKA)
Siddhānta texts	*Bṛhatsaṃhitā (BS)*

About VGJ

- Big text ~6000 verses
- 64 sections
- CAHC has published critical edition of 3 chapters
- This paper focus - Suns transit info in the Vṛddha-Gārgīya Jyotiṣa

Suns Transit in VGJ

- Info present in two places
  - Adityachārā - 11th Section
  - Ṛtusvabhāvaḥ - 59th Section

About Nakshatras

- Zones in the sky through which the Moon Sun and Gruha pass
- Using clock analogy
  - Nakshatras are the dial - 27 markings
  - The minute hand is Moon - one round a month
  - The hour hand is Sun - on round a year
- The Nakshatra dial also rotates
  - In direction opposite to Sun/Moon hand
  - And takes ~27000 years to complete a round

Nakshatras again

- Nakshatras contain taaras (~83), and have shapes
- Vedic Jaina and Baudha text list these
- PT, VGJ, AVP, SCP, SKA texts contain this info
- Locus of some Nakshatras have higher crispness
  - Krittika,Rohini,Magha,Hasta,
  - Visakha,Chitra,Swati,Jyesta,Mula
- Others have lower crispness
  - Aardra, Sravista, Dhanista, Revati

(go to table in paper)

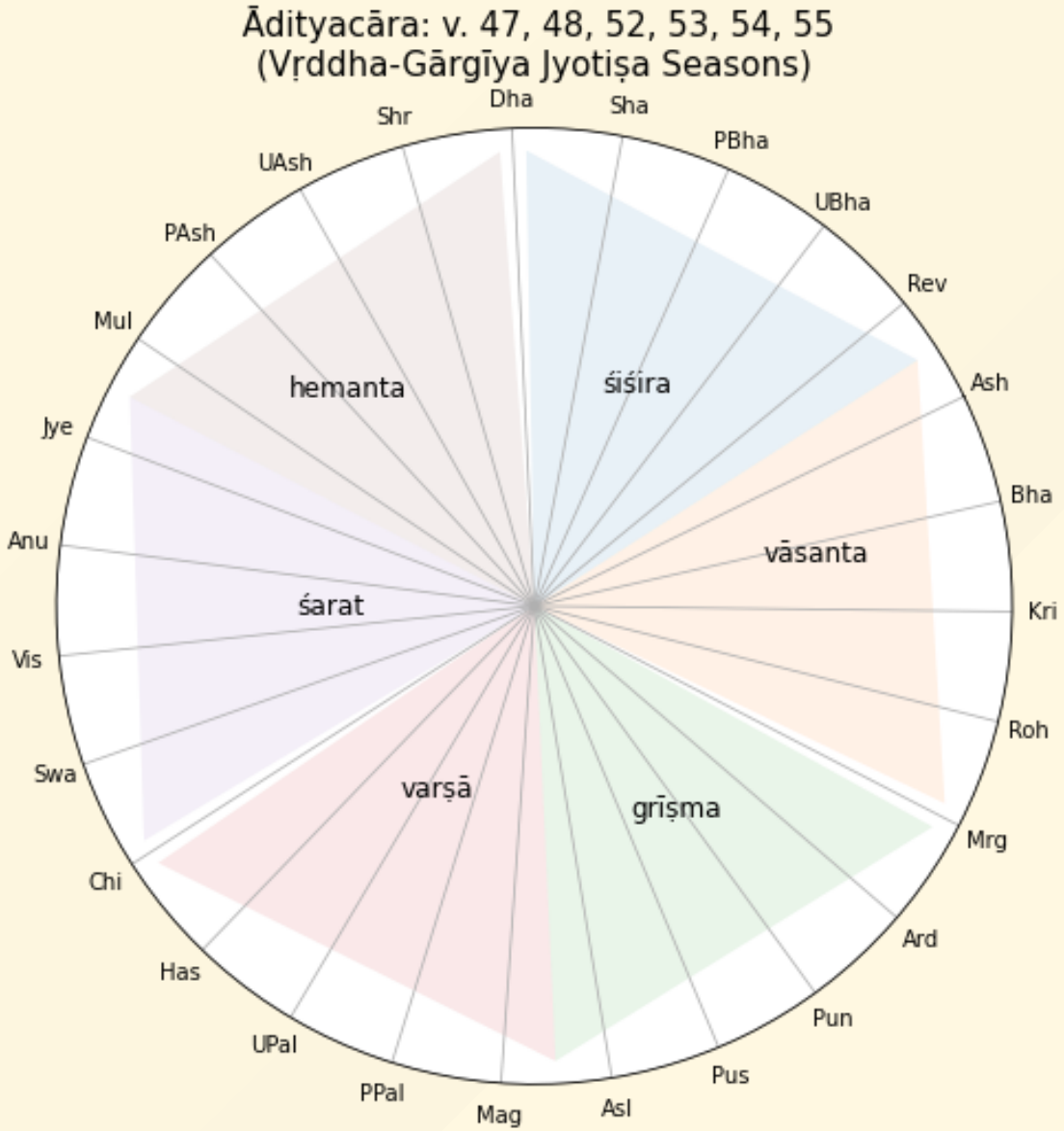
Seasons per Ādityacāra

श्रविष्ठादीनि चत्वारि पौष्णार्धञ्च दिवाकरः । वर्धयन् सरसस्तिक्तं मासौ तपति शैशिरे ॥
रोहिण्यन्तानि विचरन् पौष्णार्धाद्याच्च भानुमान् । मासौ तपति वासन्तौ कषायं वर्धयन् रसम् ॥
सार्पार्धान्तानि विचरन् सौम्याद्यानि तु भानुमान् । ग्रैष्मिकौ तपते मासौ कटुकं वर्धयन् रसम् ॥
सावित्रान्तानि विचरन् सार्पार्धाद्यानि भास्करः । वार्षिकौ तपते मासौ रसमम्लं विवर्धयन् ॥
चित्रादीन्यथ चत्वारि ज्येष्ठार्धञ्च दिवाकरः । शारदौ लवणाख्यं च तपत्याप्याययन् रसम् ॥
ज्येष्ठार्धादीनि चत्वारि वैष्णवान्तानि भास्करः । हेमन्ते तपते मासौ मधुरं वर्धयन् रसम् ॥ (Ādityacāra; v. 47, 48, 52, 53, 54, 55)

The 9 seasonal Nakshatras

Sravista(aadi) -> Revati(ardha) -> Rohini(anta)	शिशिर, वसन्त
Sowmya(aadi) -> Sarpa(ardha)-> Savitr(anta)	ग्रीष्म, वर्षा
Chitra(aadi) -> Jyesta(ardha) -> Vishnu(anta)	शरत्, हेमन्त

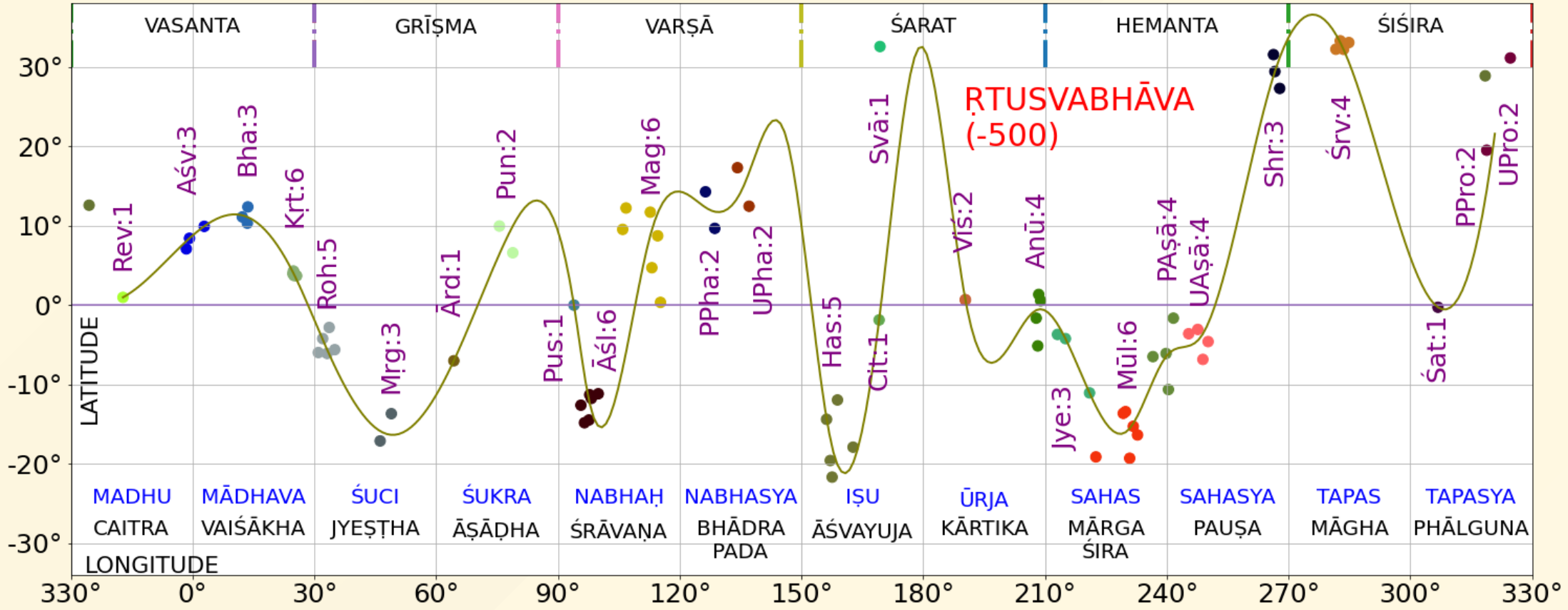
Seasons per Ādityacāra



Ṛtusvabhāvaḥ

- Suns path through 12 Vedic and Luakika months
- Suns Nakshatra for these months
- Seasons in terms of month pairs
- Year begins with vasantha
- We see finer modeling and shift towards Chaitraadi

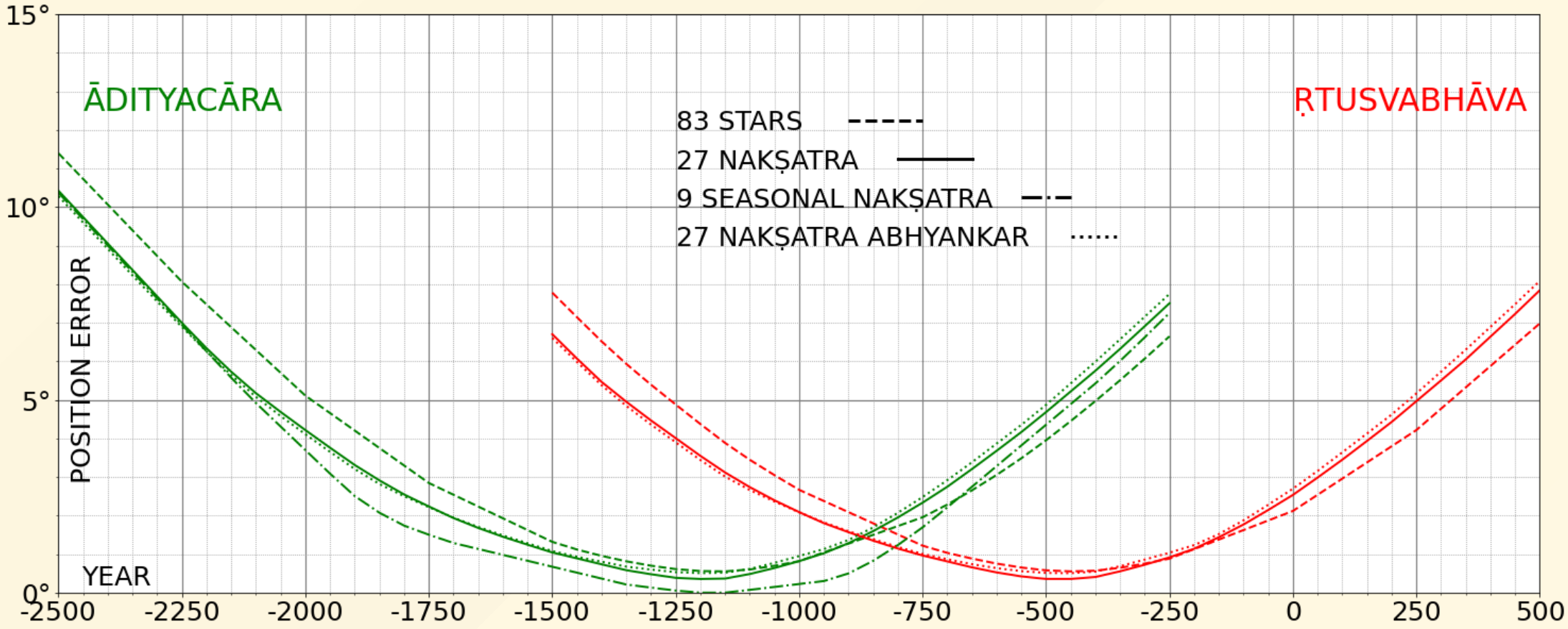
Ṛtusvabhāvaḥ



Determining Epoch

- When do the given Nakshatras and Season align best
- Assume Nakshatra zones are equally spaced 13.33 degrees each
- Test with only 9 seasonal Nakshatras, 27 Nakshatras and 83 taras
- Test with alternate positions locations of Shravana and Sravista

Determining Epoch



Conclusions

- Adityachārā about -1250
- Ṛtusvabhāvaḥ about -500
- VGJ layered and contains information across generations of observations
- Solar transit(zodiac) is certainly part of original Indian knowledge - that has been recorded and evolved over time
- VGJ has information on unequalness - further research needed