WGNE QPF VERIFICATION over Japan Sep2011 – Aug2012

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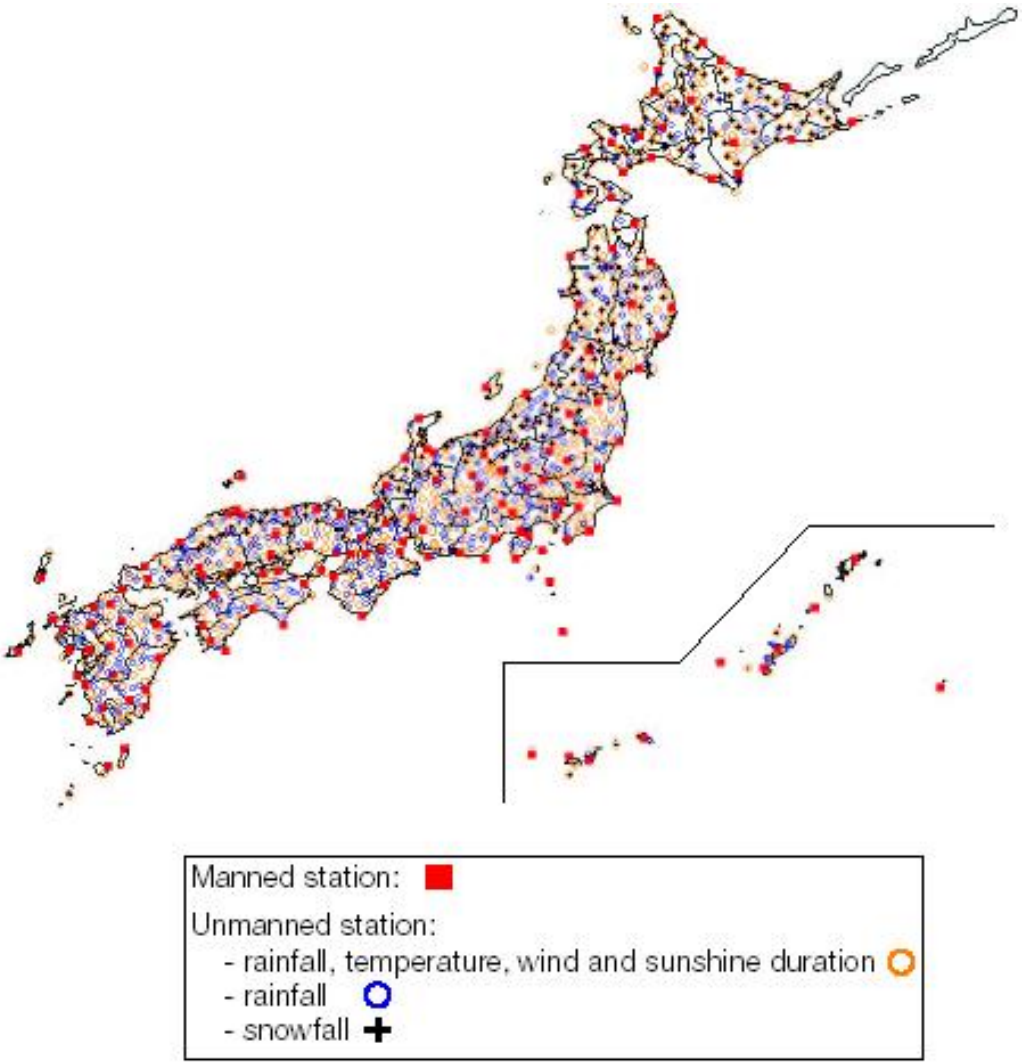
5-9 Nov. 2012, Toulouse

WGNE-28

Data and Verification Method

- Verification grid
  - 80km x 80km
- Reference data (Observations)
  - Amount of precipitation observed by raingauges
- Verified data (QPFs data)
  - Please see next page.
- Converting method
  - High resolution QPFs and Observations
    - Simple Average
  - Low resolution QPFs
    - Interpolation
- Verification method
  - Bias Score
  - Equitable thread score



-About 1300 stations over Japan

-It corresponds to17km x 17km horizontal resolution.

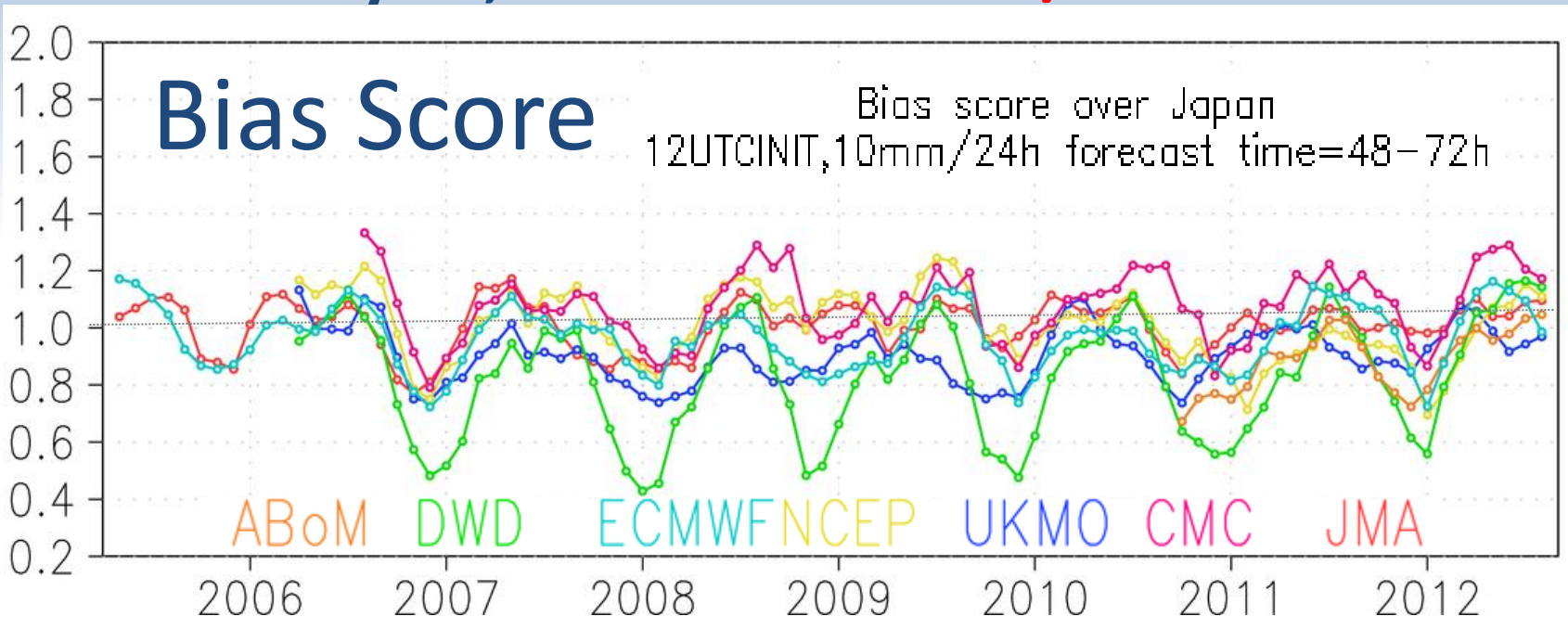
Data Specifications (~ Sep. 2012)

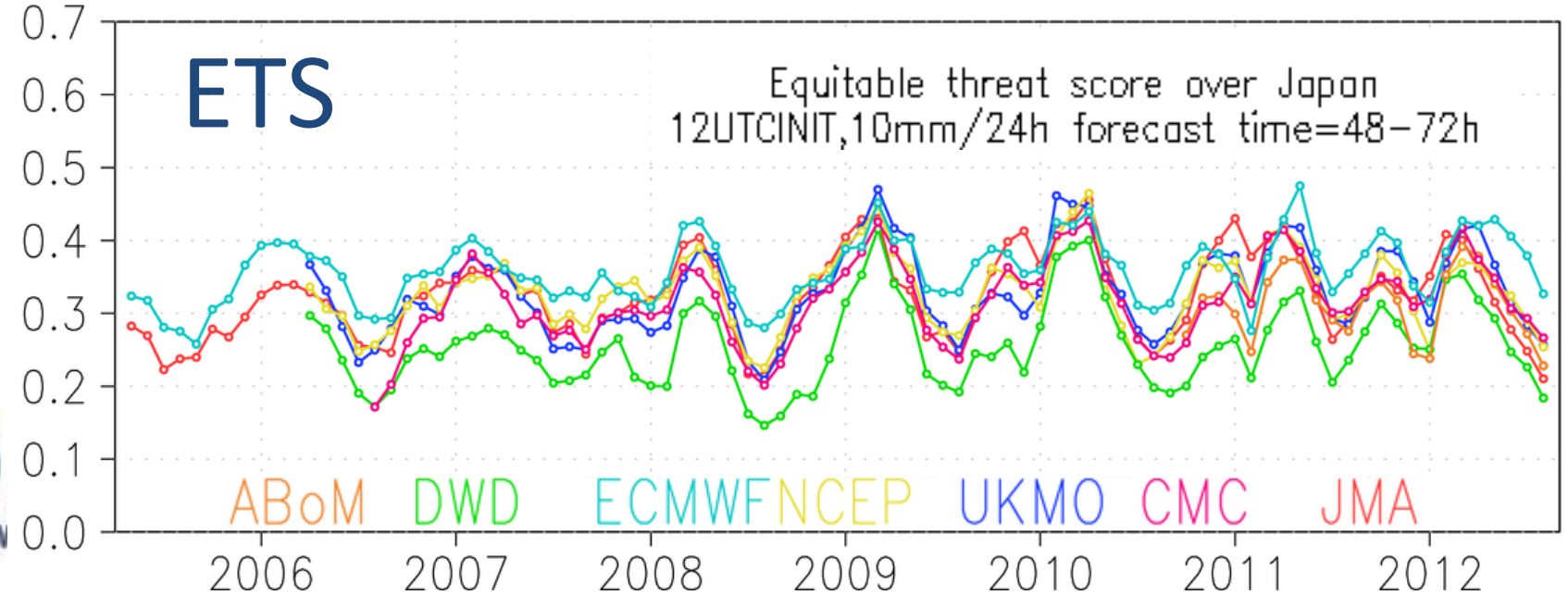
NWP center	horizontal resolution of verified data (degree)	forecast time (hour)	Deep convection scheme	Large scale cloud scheme	converting method
BoM	1.25 X 0.83	6,12,18,...,144	Gregory and Rowntree (1990)	Wilson and Ballard (1999)	Interpolate
CMC	1.00 X 1.00	6,12,18 ,…,120	Kain and Fritsch (1990), (1993)	Sundqvist et al. (1989), Pudykiewicz et al. (1992)	Interpolate
DWD	0.25 X 0.25	6,12,18,...,174	Tiedtke (1989)	Kessler-type	Average
ECMWF	0.50 X 0.50	6,12,18,...,72	Tiedtke (1989)	Tiedtke (1993)	Average
NCEP	1.00 X 1.00	6,12,18,...,84	Pan and Wu (1994)	Zhao and Carr (1997)	Interpolate
UKMO	0.35 X 0.23	6,12,18,...,96	Gregory and Rowntree (1990)	PC2: Wilson et al. (2008) Wilson and Ballard (1999)	Average
JMA	0.25 X 0.25	6,12,18,...,84	Arakawa and Schubert (1974)	Smith (1990)	Average
observation	Corresponding to 17km X 17km	-	-	-	Average

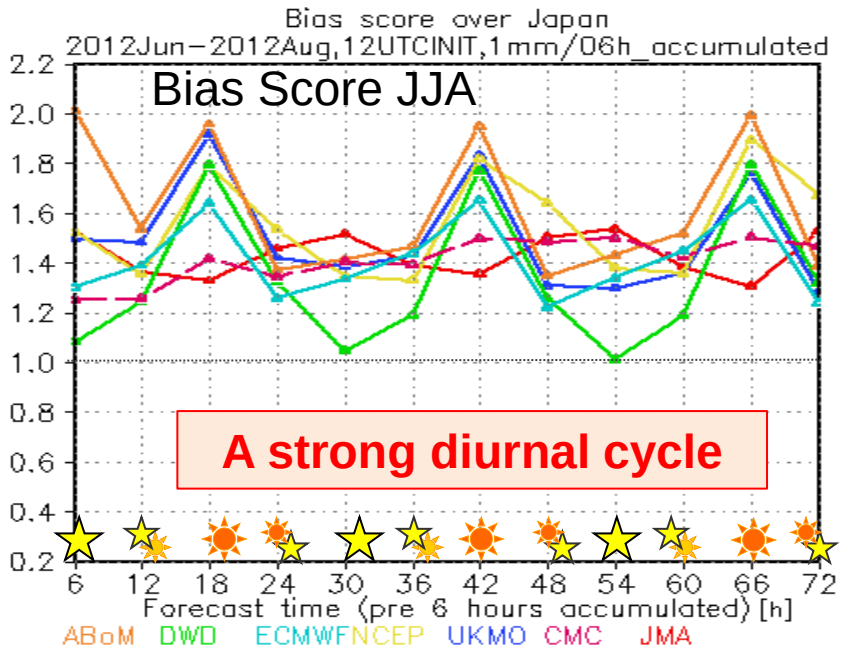
Recent major changes

- Bom
  - Mar 2012: 80kmL50 -> 40kmL70
- CMC
  - Jul 2011: Revise cumulus parametarization
- DWD
  - Feb 2012: 30km -> 20km
- NCEP
  - May 2011: Revise cumulus parametarization

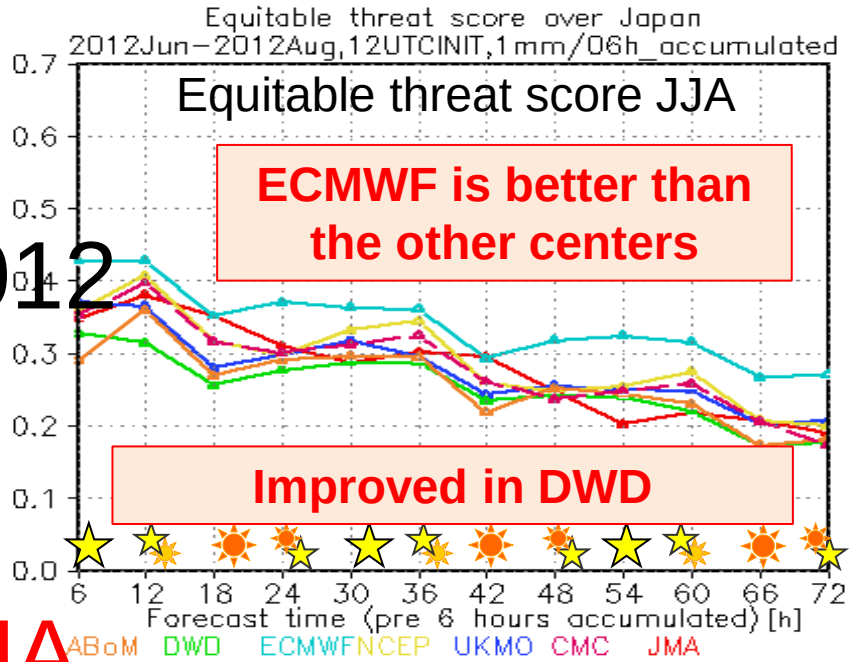
Day 3, over 10mm/24hr





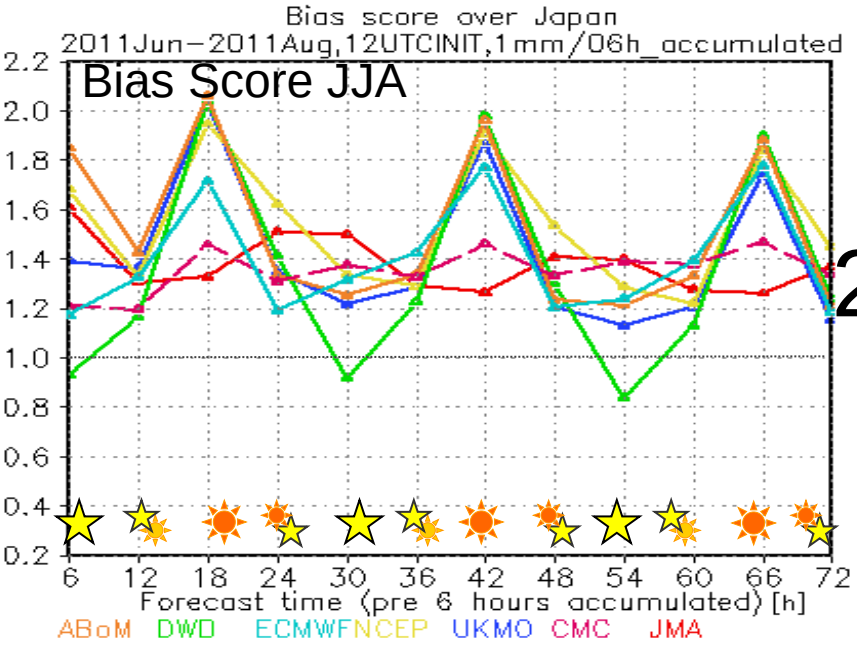


2012

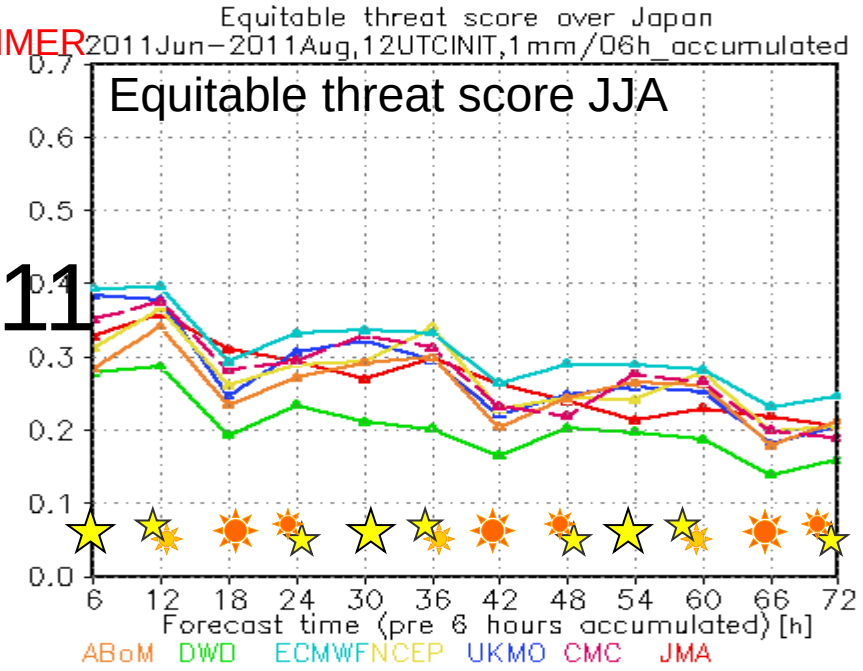


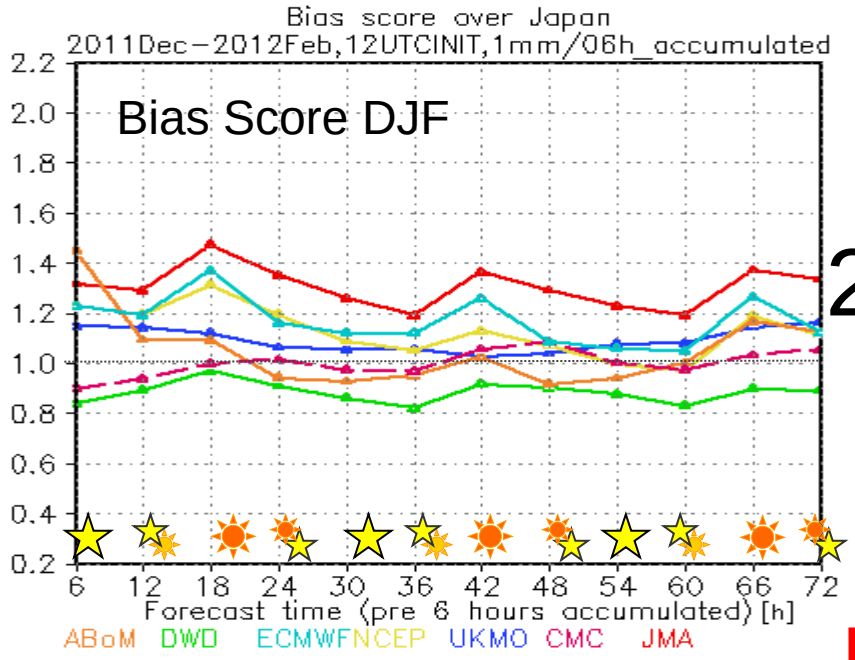
JJA

SUMMER

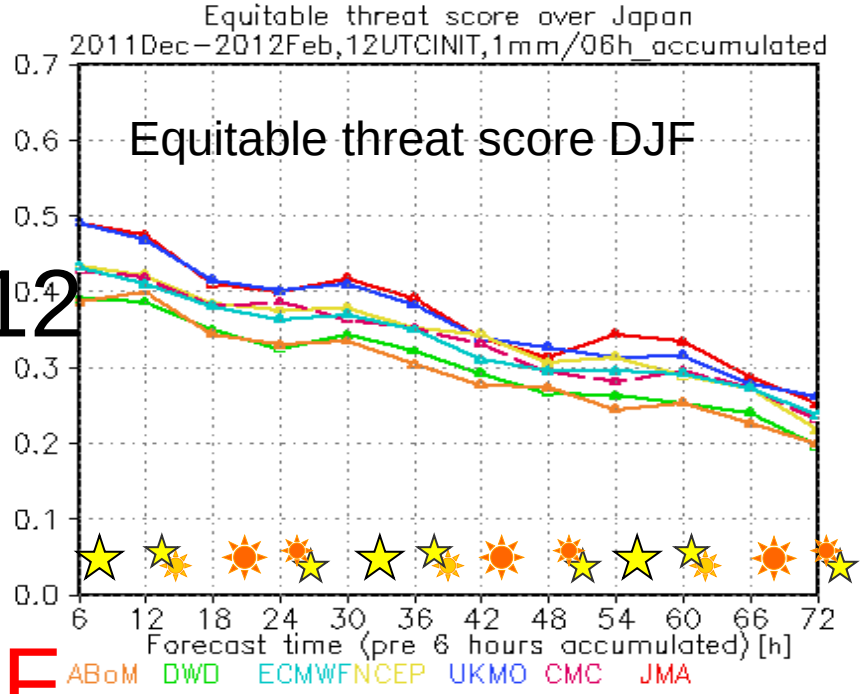


2011



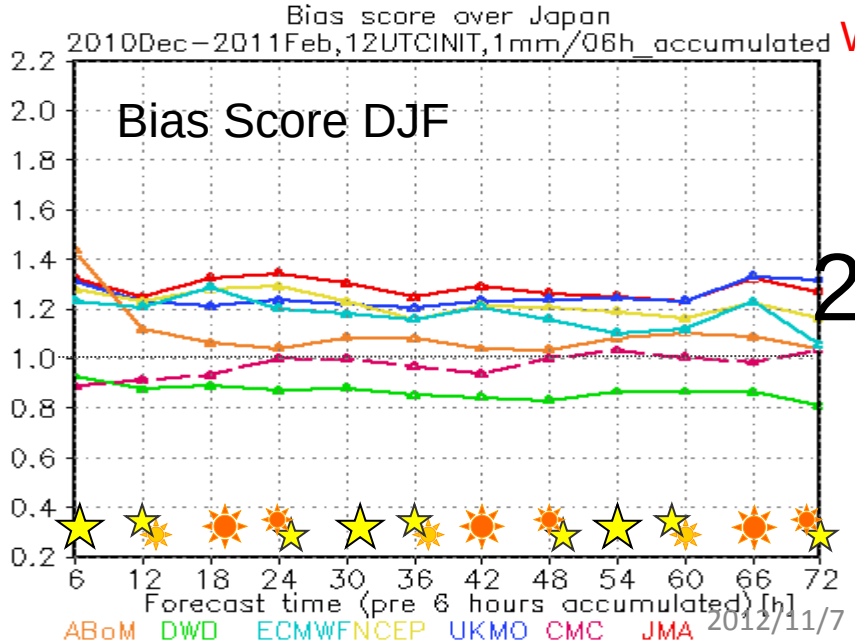


2012



DJF

WINTER



2011